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DEVELOPMENT”**

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Foreword

Every year the Faculty of Economics, Latvia University of Agriculture holds the international scientific conference “Economic Science for Rural Development” and publishes internationally reviewed papers of scientific researches, which are presented at the conference. Many economic scientists from different European countries participate in the conference. The themes of the conference are very closely connected with the current situation, therefore even three volumes of the conference proceedings are published – 15, 16 and 17. The first volumes of scientific conference proceedings were published already in 2000. **The Ministry of Agriculture of the Republic of Latvia supports the organisation of the conference and the publication of scientific proceedings.**

This year international scientific conference on April 24-25 is organised by the Department of Accounting and Finances of the **Faculty of Economics**, Latvia University of Agriculture. Every year the number of participating universities and scientific institutes increases. Professors, associate professors, assistant professors, PhD students and other researchers from the following higher education institutions participate in this conference and present their results of scientific researches:

- Latvia University of Agriculture
- Technological Educational Institute of Thessaloniki
- Lithuania University of Agriculture
- Aristotle University of Thessaloniki
- Swedish University of Agricultural Sciences
- University of Helsinki
- University of Padova
- University of Venice
- University of Latvia
- Austria Federal Institute of Agricultural Economics
- Agricultural University of Krakow
- Agricultural University of Szczecin
- Academy of Agricultural and Forestry Sciences of Latvia
- University of Technology and Life Sciences in Bydgoszcz
- Daugavpils University
- Estonian University of Life Sciences
- Latvian State Institute of Agrarian Economics
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- Riga Technical University
- University of Bonn
- Warsaw University of Life Sciences
- Latvia University of Agriculture, Faculty of Economics
- Kaunas University of Technology
- Estonian University of Life Sciences
- Research Institute of Biotechnology and Veterinary Medicine “Sigrā” of Latvia University of Agriculture
- University of Warmia and Mazury in Olsztyn
- University of Tartu
- Fulda University of Applied Sciences
- Research Institute of Agriculture Machinery of Latvia University of Agriculture
- Rēzekne Higher School.

The international scientific conference was announced in June, 2007. All the proceedings are arranged according to 10 thematic units:

- Efficiency of production in primary and secondary sectors of agriculture;
- Rural development and globalization;
- The effects of financial support;
- Regional agriculture in the contexts of specialisation and globalisation;
- Cooperation and integration;
- Rural mentality and development of the culture in rural areas;
- The role of information in rural development;
- Management of rural development;
- Quality of life and environment in rural areas;
- Changes of consumption in rural areas.

These themes are arranged in three volumes.

To ensure that only high-level scientific and methodological research results, meeting the requirements of international standards, are presented at the conference, comprehensive reviewing of submitted scientific articles has been performed on international and inter-university level. The majority of reports are in English.

Every submitted manuscript has been reviewed by one reviewer from the author's native country or university, while the other reviewer came from another country or university. The third reviewer was chosen in the case of conflicting reviews.

All reviewers were anonymous for the authors of the report. Every reviewer received manuscripts without the authors' names, while every author received the reviewers' comments and objections.

After receiving the improved (final) version of the manuscript the Editorial Board of this conference evaluated each report.

All the papers of the international scientific conference "Economic Science for Rural Development" are arranged into the following thematic volumes:

- 15. Regional and Rural Development;**
- 16. Primary and Secondary Production, Consumption;**
- 17. Finances, Taxes, Investment and Support Systems.**

The researches and their results of the conference proceedings are now available to a wide circle of readers in the European Union. We hope that the readers will enhance the possibilities of the new EU countries. The publishing of the proceedings before the conference will also promote this process, exchange of opinions and collaboration of economic scientists on international level. The proceedings can be used by students and any interested person.

The abstracts of the conference proceedings provided in English are submitted to international databases: AGRIS (*International Information System for the Agricultural Sciences and Technology*) and EBSCO, which is one of the largest electronic resource databases in the USA.

We thank all the authors, reviewers, members of the Editorial Board and supporting staff. Especially we want to thank the Ministry of Agriculture of the Republic of Latvia, the Rural Support Service and the printing house "Jelgavas tipogrāfija" for the comprehensive support in publishing the scientific proceedings and organisation of international conference.

On behalf of the conference organisers

INGRĪDA JAKUŠONOKA

professor of the Faculty of Economics, Latvia University of Agriculture

Priekšvārds

Latvijas Lauksaimniecības universitātes (LLU) Ekonomikas fakultātē līdz ar ikgadējo, tradicionālo starptautisko zinātnisko konferenci „**Ekonomikas zinātne lauku attīstībai**” iznāk tajā prezentējamo pētījumu starptautiski recenzētie zinātniskie raksti. Šo konferenci rīkošana kļuvusi regulāra. Tajās piedalās liels skaits ekonomikas zinātnieku no daudzām Eiropas valstīm. Konference veltīta aktuālai lauku attīstības tematikai, tādēļ iznāca trīs secīgi laidieni (Nr.15., 16. un 17.). Šādu zinātnisko rakstu pirmais laidiens iznāca 2000. gadā.

Konferences rīkošanu un zinātnisko rakstu izdošanu atbalstīja Latvijas Republikas Zemkopības ministrija.

2008. gada 24. un 25. aprīļa starptautiskajā zinātniskajā konferencē piedalās un savus zinātnisko pētījumu rezultātus prezentē profesori, zinātņu doktori, asociētie profesori, docētāji, doktoranti un citi pētnieki no šādām augstskolām un zinātniski pētnieciskajām iestādēm:

- Latvijas Lauksaimniecības universitātes
- Saloniku Tehnoloģiju institūts
- Lietuvas Lauksaimniecības universitātes
- Saloniku Aristoteļa universitāte
- Zviedrijas Lauksaimniecības zinātņu universitātes
- Helsinku universitātes
- Padujas universitāte
- Venēcijas universitāte
- Latvijas Universitātes
- Austrijas Lauksaimniecības agrārās ekonomikas institūts
- Krakovas Lauksaimniecības universitātes
- Ščecinas Lauksaimniecības universitātes
- Latvijas Lauksaimniecības un Meža zinātņu akadēmijas
- Bydgoszcz Tehnoloģiju un dzīvības zinātņu universitāte
- Daugavpils universitātes
- Igaunijas Dzīvības zinātņu universitātes
- Latvijas Valsts agrārās ekonomikas institūta
- Austrijas Mazāk labvēlīgo un kalnaino apgabalu institūts
- Rīgas Tehniskās universitātes
- Bonnas universitātes
- Varšavas Dzīvības zinātņu universitāte
- Latvijas Lauksaimniecības universitātes Ekonomikas fakultātes
- Kauņas Tehnoloģiju universitātes
- Igaunijas Dzīvības zinātņu universitāte
- LLU Biotehnoloģiju un Veterinārmedicīnas pētniecības institūts „Siga”
- Varmijas un Mazūrijas universitātes Olzstinā
- Tartu universitātes
- Fuldas profesionālās universitātes
- LLU Lauksaimniecības mašīnu pētniecības institūts
- Rēzeknes augstskola.

Starptautiskā zinātniskā konference tika izsludināta 2007. gada jūnijā. Tai izvēlēti 10 aktuāli temati:

- Ražošanas efektivitāte lauksaimniecības primārajā un sekundārajā sfērā
- Lauku attīstība un globalizācija
- Lauku ekonomiskā un sociālā attīstība
- Finansiālā atbalsta efektivitāte
- Reģionālā lauksaimniecība specializācijas un globalizācijas kontekstos

- Kooperācija un integrācija
- Lauku mentalitāte un kultūras attīstība laukos
- Informācijas loma lauku attīstībā
- Lauku attīstības menedžments
- Dzīves un vides kvalitāte laukos
- Patēriņa izmaiņas lauku attīstībā

Šie temati ietilpināti trīs zinātnisko rakstu laidienos.

Starptautiskās zinātniskās konferences zinātniskuma un starptautiskiem standartiem atbilstošu zinātnisko darbu prezentēšanas nodrošināšanai veikta vispusīga iesniegto zinātnisko rakstu starptautiska un starpaugstskolu recenzēšana. Šajā nolūkā lielākā daļa zinātnisko rakstu ir angļu valodā.

Katru iesniegto zinātniskā raksta manuskriptu vērtēja (recenzēja) parasti viens autora valsts recenzents un otrs – citas valsts vai citas augstskolas recenzents. Pretrunīgu recenziju gadījumā darbs tika nodots vēl trešajam recenzentam. Recenzenti darbu autoriem bija anonīmi, arī redkolēģija recenzentiem nodeva darbus bez autoru uzvārdiem.

Katram autoram tika nosūtīti recenzentu iebildumi vai ieteikumi. Pēc uzlabotā (galīgā) varianta un autora paskaidrojuma saņemšanas katru zinātnisko rakstu vērtēja šīs konferences zinātnisko rakstu redkolēģija.

Starptautiskās zinātniskās konferences „Ekonomikas zinātne lauku attīstībai” visi zinātniskie raksti sakārtoti trijos tematiskos rakstu laidienos:

Nr. 15. Attīstība: lauku un reģionālā

Nr. 16. Primārais un sekundārais sektors, ražošana, patēriņš

Nr. 17. Finances, nodokļi, investīcijas un atbalsts

Zinātniskajos rakstos izklāstītie pētījumi un to rezultāti kļūst pieejami plašam interesentu lokam Eiropas Savienības telpā. Ceram, ka tie aktualizēs jauno Eiropas Savienības valstu iespējas. Rakstu publicēšana pirms konferences sekmēs tās norisi, domu apmaiņu, ekonomikas zinātnieku starptautisko sadarbību. Rakstus varēs izmantot studējošie un visi interesenti.

Konferences zinātnisko rakstu kopsavilkumi angļu valodā tiek izsūtīti starptautiskām datu bāzēm: AGRIS (*International Information System for the Agricultural Sciences and Technology*) un EBSCO - vienu no lielākajām ASV elektronisko resursu datu bāzēm.

Ceram saņemt atsauksmes un priekšlikumus turpmāko zinātnisko rakstu izdevumu sagatavošanai un starptautisko zinātnisko konferenču rīkošanai.

Pateicamies visiem rakstu autoriem, recenzentiem, programmas komitejai, redkolēģijai un tehniskajam personālam. Sevišķs paldies Latvijas Republikas Zemkopības ministrijai, Lauku atbalsta dienestam un Jelgavas tipogrāfijai par vispusīgu atbalstu zinātnisko rakstu izdošanā un starptautiskās konferences rīkošanā.

Konferences orgkomitejas vārdā

INGRĪDA JAKUŠONOKA

Latvijas Lauksaimniecības universitātes Ekonomikas fakultātes profesore

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Monitoring of Financial Support under the Cohesion Fund

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Abstract

The purpose of the present article is to analyse and assess the monitoring system for absorption of funding made available under the Cohesion Fund. The above objective is attained by completing three main tasks: performing an assessment of the legislative framework for the monitoring system of absorption of funding under the European Union Cohesion Fund, conducting analysis and evaluation of the monitoring system of absorption of funding under the Cohesion Fund, as well as identifying its improvement possibilities and recommended options. As a result of completing the above tasks of the study, novelty and scientifically justified recommendations were made to improve the monitoring system of absorption of funding under the Cohesion Fund. The main recommendation is to establish a new monitoring and control system that is not subordinated to the body responsible for the project development or project implementation.

Key words: Cohesion Fund, legislation, monitoring system, verification, audit

Introduction

Equalisation of the economic development of member states and particular regions is an important sector and principle of strategic policy of the European Council. This is the purpose for establishing the Cohesion Fund. It has granted substantial assistance to Latvia as well, which requires appropriate administration and monitoring.

One might assume that solutions for these problems in Brussels are based on scientific rationale, while each member state has its peculiarities calling for particular researches in Latvia as well.

The review of scientific and periodical sources resulted in identifying researches already conducted on some of the topics: Ilze Āboliņa has published researches on the administrative system (Āboliņa I., Instruments for Regional Convergence and their Administration system, 2007.), documentary framework and institutional system (Āboliņa I., Documentary and institutional system (framework) of the European Union Cohesion Fund, 2006).

However, the funding from the Cohesion Fund has already been invested and its absorption should be appropriately monitored.

Therefore the theme of this publication is to be considered as topical or rather topical.

The **aim** of this research is to analyse the legal framework and institutional system of absorption of funding under the Cohesion Fund (henceforth – CF), and to assess the possibilities for its improvement in line with the situation in Latvia.

Within this aim three **tasks** have been identified:

- 1) to analyse the legal framework for absorption of the CF funding;
- 2) to analyse the institutional monitoring system of absorption of the CF funding;
- 3) to assess and suggest possibilities to improve the monitoring system.

To solve the said tasks the following sources are studied: special Regulations of the European Council, laws and Cabinet Regulations of the Republic of Latvia, documents passed by the Ministry of Finance (henceforth – MoF) and other institutions.

The method of analysis has been used in the research to study the legal framework and monitoring system for absorption of funding in Latvia and its neighbouring countries, as well as a comparative method, studying how monitoring systems operate in Estonia and Lithuania. The logical construction method to define the possibilities for improving the monitoring system was used as well.

Results and Discussion

1. The legislative framework of the Cohesion Fund monitoring

The monitoring process of absorption of the CF funding is regulated by these specific articles of the European Union (henceforth – EU) Regulations:

Regulation 1164/94 establishing a Cohesion Fund issued on the basis of the Treaty. The following necessary measures have been stipulated in Article 12(1) of this Regulation:

- to verify on a regular basis that operations financed by the Community have been properly carried out;
- to prevent irregularities and take action against them;
- to recover any amounts lost as a result of irregularity or negligence. Except where the Member State provide proof that they were not responsible for the irregularity or negligence.

2. Based on Article 12 of the Regulation 1164/1994, *Regulation (EC) No.1386/2002*, “laying down detailed rules for the implementation of Council Regulation (EC) No. 1164/94 as regards the management and control systems for assistance granted from the Cohesion Fund and the procedure for making financial corrections” was adopted.

According to the requirements of the Regulation a national law and Cabinet Regulations, the monitoring process for absorption of the CF funding has been adopted.

1. The European Union Cohesion Fund Project Management Law came into effect on 1 January 2006.

Section 5 of the Law regulates the monitoring process of project implementation – in particular – the Monitoring Committee, its purpose, members, rights and obligations. While Chapter 6 of the Law governs financial control and audit – it regulates the functions of the institutions in controlling project implementation, regulates audits to which projects are subjected and certifying the statements of final project expenditure.

The Cabinet Regulations No. 271 “Procedure of On-the-spot Checks for Projects Financed from the Cohesion Fund” came into effect on 4 April 2006.

Pursuant to Article 15 of the European Union Cohesion Fund Project Management Law, the compliance of project implementation with the legislatively established budgetary and financial requirements is monitored and assessed by a Monitoring Committee (MC). The rules of procedure of the MC are approved by the Monitoring Committee.

The Internal Audit Law adopted on 20 November 2002 is of particular importance. Considering that each member state has set up its own administrative and monitoring system, and the checks are carried out in line with internal delegation, in order to assess their efficiency and extent to which it reaches the objectives set forth, the implementation systems of the member states are audited according to unified auditing standards.

2. The institutional system in Latvia for monitoring absorption of the CF funding

The said legislation sets forth that in the course of project implementation or following its completion, the Member State and the European Commission (henceforth - EC) shall monitor and assess progress in projects, their actual and potential impacts and compliance with objectives set in the relevant Financial Memoranda/ EC Decision.

According to the requirements of the legislation, in order to provide for complete control over the use of the CF funding, the following checks are carried out:

- 1) on-the-spot checks;
- 2) management and control system efficiency checks;
- 3) sample checks of expenditure declarations prepared at different levels;
- 4) independent certification of statements of final project expenditure.

The bodies involved in the institutional system of the CF are responsible for financial management and control within their remit:

- the Managing Authority is responsible for absorption of the CF funding and justifying allocations;
- the Paying Authority is responsible for certifying the expenditure of the member state;
- the Intermediate Body is responsible for eligibility of the funding received from the CF, overall financial and physical progress;
- the Implementing Body is responsible for use of the funding in compliance with the legal norms of the EU and Latvia;
- Final Beneficiaries are responsible for efficient absorption and management of the funding.

Irrespective of the bodies involved in management processes, the monitoring function is additionally ensured by a special independent structural unit of the Ministry of Finance (MoF) along with the Audit Authority (audit units of the bodies incorporated in the institutional system).

The Managing Authority according to the European Union Cohesion Fund Project Management Law carries out the following monitoring and verification functions:

- 1) provides for submission of audit plans and reports of the MoF, Paying Authority and Intermediate Bodies to the EC;
- 2) assesses the results of on-the-spot checks conducted by the Intermediate Bodies, and carries out audits to ascertain the compliance and efficiency of internal control systems in Implementing Bodies and Final Beneficiaries involved in the Cohesion Fund project management;
- 3) assesses the results of the sample checks and audits of project expenditure submitted by the Intermediate Bodies, as well as uses methodology and informs the Audit Authority on the aforementioned;
- 4) in addition, the Managing Authority has the right to conduct on-the-spot checks of projects in the following bodies:
 - the Paying Authority;
 - the Intermediate Body;
 - the Implementing Body;
 - Final Beneficiaries.
- 5) provides information to the Paying Authority, independent structural unit and Intermediate Bodies on the checks carried out by the Managing Authority.

The functions of the CF Managing Authority are carried out by the Project Appraisal Department of the MoF. The Department is directly subordinated to the **Deputy State Secretary on Foreign Finance Aid Coordination Issues**. On-the-spot checks are carried out by the employees of the Department according to the regulations, inviting external technical experts in case of necessity (By-laws of the Ministry of Finance, 2007).

The functions of the Paying Authority in Latvia are carried out by the State Treasury that according to the European Union Cohesion Fund Project Management Law keeps an account of amounts recoverable from payments of Community assistance already made, and ensures that the amounts are recovered without unjustified delay. After recovery, it shall repay the irregular payments recovered, together with interest received on account of late payment, by deducting the amounts concerned from its next statement of expenditure and request for payment to the Commission in respect of the project concerned. If this is insufficient, the Commission may request that the excess amount be refunded to it.

The Paying Authority shall send the Commission once a year, in annex to the fourth quarterly report on recoveries supplied under Regulation (EC) No. 1831/94, a statement of the amounts awaiting recovery at that date, classified by the year of initiation of the recovery proceedings.

The Paying Authority has a right to conduct sample checks of project expenditure and carry out audits to ascertain the compliance and efficiency of internal control systems in the institutions involved in the Cohesion Fund project management.

The Paying Authority has the right to carry out on-the-spot checks – at the Managing Authority, Intermediate Body, Implementing Body, and Final Beneficiary. This is necessary to gain assurance on the compliance of one of the certified expenditure and assistance from the EU policy instrument claimed from the EC, as stipulated in the Cabinet Regulations of 3 August 2004 No. 677 By-laws of the State Treasury.

The Intermediate Body according to the European Union Cohesion Fund Project Management Law carries out the following functions:

- 1) carrying out on-the-spot checks;
- 2) conducting audits to ascertain the compliance and efficiency of internal control systems in institutions involved in the Cohesion Fund project management;
- 3) carrying out sample checks of project expenditure;
- 4) submission of reports on on-the-spot checks for review of the Managing Authority;
- 5) submission of reports on checks and audits referred to in Items 2 and 3 above to the MoF;
- 6) submission of internal audit plan to the MoF every year;
- 7) submission of a description to the Managing Authority of the methodology employed to carry out checks referred to in Item 1 above;

- 8) submission of a description to the Managing Authority of the methodology employed to carry out checks referred to in Items 2 and 3 above.

The functions of the Intermediate Bodies in Latvia are carried out by the Ministry of Environment (henceforth – MoE) for environmental projects and the Ministry of Transport (henceforth – MoT) for projects in transport sector. Each of the above ministries has a specific and different monitoring system for absorption of the CF funding.

In the MoE the projects are managed by the Investment Department, Project Development Department, Project Implementation Department and External Relations Unit. The Intermediate Body is lead by the Deputy State Secretary – Director of the Investment Department. The Investment Department consists of the following three units – Strategy and Budget Unit, Financial Management Unit, and Quality Control Unit. The control and monitoring of the CF fund implementation is performed by the Quality Management Unit. Consequently, under the current circumstances, the control and monitoring function is vested in a structural unit, that is directly subordinated to the official who is at the same time responsible for implementing projects. A further peculiarity is found to represent individual cases when colleagues from other units of the Department and from the Project Implementation Department are involved in on-the-spot checks. It therefore results in a situation when the body responsible for implementing projects carries out checks on the progress attained (Description of the Management and Control System, 2007).

In the MoT the Investment Department performs the functions of the Intermediate Body. The Intermediate Body is lead by the Deputy State Secretary. The control functions in the MoT are carried out as a separate area of competence by the EU-funded Projects Control Unit being supervised by the State Secretary of the MoT. The principle of independence is therefore observed in checking procedures in the MoT, insofar as independence is possible within a single institution (Description of the Management and Control System, 2007).

The Implementing Body according to the European Union Cohesion Fund Project Management Law is responsible for meeting special conditions of the relevant EC Decision or Financial Memorandum, checking supporting documents submitted by a Contractor (on the scope, quality and other contractual aspects of services, supplies and works) against the relevant procurement contract as well as submission of the verified payment documents and an expenditure declaration in the project and submission of reports and information on project implementation to the Intermediate Body, and organising information and publicity events regarding projects completed.

Comparing the CF monitoring system with the Structural Fund monitoring system for 2004 – 2006 or with, for example, SAPARD monitoring system, a negative outcome of such comparison is related to the fact that a significant aspect is ignored here. Namely – monitoring after completion of the project. As regards Structural Funds and SAPARD projects (SAPARD programme for agriculture and rural development in Latvia 2000 – 2006) were monitored for five years after the project completion and the final beneficiary must make sure that the objectives set for the project are achieved (EC Regulation No. 1260, 1999). In respect of the CF this rule has been forgotten, while it would be very useful, since now there are situations where after the project implementation the assets purchased for project funding are not used for purposes as intended in the project objectives. With monitoring checks in place it would be made sure that after the project completion the assets are maintained in line with the project objectives and - most importantly – the objectives stipulated in the project would be achieved.

The functions of the independent structural unit are carried out by the Financial Control Department of the MoF, the functions which are separated from those of the Managing Authority and Paying Authority. The Financial Control Department is directly supervised by the State Secretary (**By-laws of the Ministry of Finance, 2007**). The unit carries out independent checks on the compliance of final project expenditure declarations with the EU requirements, and prepares an opinion for submission to the Managing Authority.

Where the independent structural unit finds an expenditure declaration to contain amounts unduly paid, it is responsible for reporting on the above fact to the Managing Authority and Paying Authority.

Irrespective of the fact that the functions of the independent structural unit are separated from those of the Managing Authority, both these institutions are part of the MoF and under supervision of the same senior official – State Secretary. Thus these are circumstances that raise doubts about the ability of the independent structural unit to be in fact independent in a conflict situation. Unfortunately, here it must be pointed out that a negative precedent has already taken place, and it leads to the conclusion that it is necessary to make immediate changes in the institutional system.

The functions of the Audit Authority are performed in accordance with the Internal Audit Law by the audit units of authorities incorporated in the institutional system and the Internal Audit Department of the MoF.

The CF management and control system audits are performed by the Internal Audit Department of the Ministry of Finance. The Managing Authority reports to the Internal Audit Department on irregularities identified in projects co-financed from the CF. The Audit Authority informs the Managing Authority about deficiencies identified in the CF management and control system, and submits an action plan to correct them. The Internal Audit Department of the MoF monitors the follow-up procedure of the identified deficiencies within the set deadlines.

The functions of audit bodies in the MoE and MoT are performed by relevant Internal Audit Departments (IAD) that are directly subordinated to the State Secretary. The IADs perform sample checks, in order to:

- verify the effectiveness of the management and control systems in place;
- verify selectively, on the basis of a risk analysis, expenditure declarations (calculations) made at the various levels concerned (Description of the Management and Control System, 2007).

Sample checks carried out from 2000 to 2006 cover at least 15% of the total expenditure for projects approved for the first time during this period, eligible for reimbursement of claims. The planning must ensure that checks are spread evenly over the period of the programme. When establishing a sample of transactions for checking, the following aspects must be considered:

- projects of various types and sizes must be checked in sufficient quantity;
- risks identified by national or Community controls;
- sufficient control of various project management and implementation bodies must be ensured along with controls effected in both fields of the CF activity.

An analysis of audit reports performed suggests that requirements of Article 9, Regulation 1386/2002, have not been met. Currently audit units have failed to audit the minimum of 15% expenditure of projects first approved in the current programming period. This cannot be considered a material irregularity, because in the time remaining for project implementation the missing checks can still be carried out. However, it still can be considered a poor practice in conducting checks, if such checks are not conducted on a regular basis and the appropriate percentage is not adhered to.

3.External audits of the Cohesion Fund implementation

The CF projects are subject to audit initiated by the State Audit Office, EC and European Court of Auditors.

The Managing Authority, Paying Authority, Intermediate Bodies, Implementing Bodies and Final Beneficiaries have the following obligations:

- to present documents (including electronic documents) related to the project implementation to auditors;
- to ensure access to documents on financial resources, other assets and premises, in case the above are related to the audit procedure;
- to prepare excerpts and copies of the necessary documents;
- to provide an explanation to auditors on the development, implementation and monitoring of projects.

The Managing Authority is required to coordinate the activities of external auditors in Latvia and draft responses to audit reports. The other involved institutions are obliged to provide information to the Managing Authority upon request.

It must be noted that any organisation incorporated in the institutional system of the CF has the rights to invite certified external auditors for assessment of its operations to carry out an independent audit in order to gain assurance on the correctness in implementation of a project.

Monitoring Committee

The Monitoring Committee (henceforth – MC) is a separate monitoring unit outside the conventional scope of checks, however, it is carrying out certain monitoring functions.

It monitors progress in every CF project, as well as their compliance with objectives and timelines set in the Financial Memorandum/EC Decision. The MC has a right to propose various measures to the EC to improve the potential of projects. Unfortunately, the MC may adopt decisions of recommending nature only

subject to mutual agreement by and between the members of the MC. The Managing Authority is in charge of establishing the MC and providing for its operation.

The tasks of the MC can be defined as follows:

- to monitor and assess the progress of project implementation in the environmental and transport sector;
- to monitor the progress of financial and physical indicators of projects in accordance with financial and activity plans submitted to the European Commission;
- to assess proposals for amendments to the relevant European Commission decisions or financial memorandum submitted to the Monitoring Committee.

The rights of the MC can be defined as follows:

- to propose that steps are taken to achieve the set project objectives;
- to express an opinion on the drafted project monitoring reports or annual progress reports;
- to express an opinion on measures to be implemented for the purpose of publishing information, securing its availability, as well as submitting information required for the EC;
- to request additional information on project implementation from all the parties involved (Rules of Procedure of the Monitoring Committee, 2006).

Cohesion Fund project monitoring in neighbouring countries

When looking at the experience of neighbouring countries – Lithuania and Estonia – in absorption of the CF funding it can be concluded that the systems employed in all the three Baltic States are similar. For instance – in all the three Baltic States the respective Ministry of Finance is the Managing Authority, Paying Authority and Audit Authority. There are some differences with respect to the Paying Authority – in Lithuania these functions are performed by the National Fund Department of the MoF, while in Estonia it is done by the EU Payments Department. Intermediate Bodies are the same for all Baltic States – the Ministry of Transport and the Ministry of Environment. When looking more closely at Lithuanian system it can be seen that there are only two implementing bodies – Transport Investment Directorate and Environmental Project Management Agency; beneficiaries can be local governments, local government organisations and organisations of the transport sector. In Estonia, the system is more similar to the one in Latvia – it has several implementing bodies and a number of final beneficiaries – according to the respective sectors – e.g., a railway organisation, local governments or local government enterprises.

In Estonia, the emphasis is on two types of controls used to assure that absorption of the EU funds is in compliance with regulations – on-the-spot checks and audits. In Estonia, sample checks of expenditures are seen as audits (<http://www.strukturifondid.ee>).

The key tasks of the Estonian CF Managing Authority in the field of monitoring are accreditation of intermediary bodies and controlling whether everything is done according to the accredited system. In addition, Estonian Managing Authority is responsible for creation of an efficient management and control system and its successful operation. On-the-spot checks are performed either by the Intermediate Bodies or – which is quite interesting – by Implementing Bodies. The Paying Authority checks whether documents to be submitted to the EC – payment claims – comply with the requirements. Audits are performed by auditors of the MoF Financial Control Department, Intermediate Bodies and Implementing Bodies (<http://www.strukturifondid.ee>).

In Estonia, the MoF performs the functions of the independent structural unit as a separate area of competence. It can be noted that in Latvia and Estonia the name of the independent structural unit is the same - Financial Control Department. In addition to audits the Financial Control Department also deals with implementation of anti-fraud coordination measures – it collects information on irregularities and informs the EC on this (<http://www.strukturifondid.ee>).

In Lithuania, the main functions of the Managing Authority are to coordinate the implementation of the CF strategy, and to prepare an efficient management and control system, as well as to monitor and improve the system's operation.

Lithuanian Paying Authority checks whether the prepared payment claims to the EC are compliant and of appropriate quality. A fact worth mentioning is that in Lithuania the European Union Fund Department of the MoF performs the functions of the Paying Authority, while there is a separate State Treasury Department, which deals with effecting payments to the contractors (<http://www.esparama.lt>).

Another interesting aspect is that in Lithuania sample checks of expenditures are performed by the independent structural unit – the Financial Control Methodology Department of the MoF (henceforth – FCMD) as a separate area of competence, whereas the Internal Audit Department of the MoF only audits the EU programmes. In my opinion, this is a better division of functions, because, in contrast to Latvia, this allows the staff of Lithuanian FCMD to follow-up continuously the implementation of projects, to detect potential errors already at an early stage, and to ensure that they are eliminated before the end of the project implementation term, thus avoiding ineligible expenditure (<http://www.esparama.lt>).

Another positive fact worth mentioning is that in Lithuania in addition to monitoring by the institutional system two additional organisations are involved – the National Audit Office and the Financial Crime Investigation Service. The task of the National Audit Office is to perform audits for the CF projects, while the Financial Crime Investigation Service is responsible for analysing irregularities in the Cohesion Fund projects and informing the EC on that (<http://www.esparama.lt>).

In addition to the monitoring functions performed by the administrative system, both in Estonia and Lithuania the respective Monitoring Committee provides independent monitoring of absorption of the CF funding.

Conclusions, problems and solutions

1. In Latvia, the system of monitoring absorption of the CF funding has been established in accordance with the EU Regulations and the legal acts of Latvia.
2. The system of monitoring absorption of the CF funding is integrated within the system of administration of funds.
3. In Latvia, the audits envisaged in the system of monitoring absorption of the CF funding are not performed according to the volumes and the principle of spreading checks evenly stipulated in Article 9 of Regulation No.1386/2002.

Possible solution: the Managing Authority shall closely follow the audit plans and final reports prepared and submitted by the Audit Authority. In cases of non-performance explanations shall be requested immediately from the Audit Authority, and it shall be ensured that the missing audits are performed.

4. The procedure established by the MoT for performing the checks specified in Article 4 of Regulation No.1386/2002 can be considered more efficient and successful than the procedure established by the MoE.

Possible solution: the Managing Authority develops a unified methodology for performing checks and follows up to ensure that this methodology is applied.

5. External audits are coordinated by the Managing Authority, which means that auditors are given a coordinated opinion of the government of Latvia on particular issues.
6. The system of monitoring of the CF funding must be changed so that performing the checks specified in Article 4 of Regulation No.1386/2002 and post-implementation monitoring of projects is assigned to an independent institution.

Solution:

- A study shall be performed on costs of the monitoring system within the framework of the existing system and how much the setting up of an independent institution would cost, also the benefits from an independent system shall be considered.
- Respective changes shall be included in the legal framework.
- An institution shall be established under the supervision of the Cabinet of Ministers or the MoF, and appropriate budget shall be allocated. Human resources and experience is used by taking as an example the existing system.

Such independent monitoring institution separate from the administration system would ensure maximum transparency of the system and would eliminate any possibility to influence the decision-making process of the person performing checks.

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Kopsavilkums

Raksta mērķis ir analizēt un novērtēt Kohēzijas fonda atbalsta līdzekļu apguves uzraudzības sistēmu. Mērķa sasniegšanai risināti trīs galvenie uzdevumi - novērtēt normatīvo bāzi Eiropas Savienības Kohēzijas fonda līdzekļu apguves uzraudzības sistēmai, analizēt un izvērtēt Kohēzijas fonda līdzekļu apguves uzraudzības sistēmu un tās pilnveidošanas iespējas un ieteicamos veidus. Izpildot pētījuma uzdevumus, izstrādāti jauni, zinātniski pamatoti ieteikumi Kohēzijas fonda līdzekļu apguves uzraudzības sistēmas pilnveidošanai. Būtiskākais ieteikums ir veidot jaunu uzraudzības un kontroles sistēmu, kas nebūtu pakļauta iestādei, kura nodarbojas ar projektu sagatavošanu, ieviešanu vai realizāciju.

Atslēgas vārdi: Kohēzijas fonds, tiesību akts, uzraudzības sistēma, pārbaude, audits.

Financing Profile of Agricultural Investments: the Case of the Central Macedonia Region, Greece

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Abstract

After a decade of radical changes and reforms on a European and global level, agriculture in Greece is today going through a period of particular significance for its future. A major opportunity for improving the competitive nature of Greek agriculture is linked to the transformation of its existing structures, through the adoption of more business-oriented, competitive attributes. The aim of this paper is to examine the financing profile of agricultural farms in Greece, based on certain economic parameters, as stated and calculated in the investment plans submitted to the Region of Central Macedonia. The present paper is based on the research involving 296 investment plans (improvement plans) for agricultural holdings, a number which almost fully corresponds to the total number of investment plans included into the financing programme for the period 2002-2004. The examination of the investment plans was conducted on the basis of a point system used during the checking and approval process, and was also related to the level of public participation, and the borrowed and own capital that was invested. A series of analyses was applied to the available data, based on Hierarchical Cluster Analysis and K-Mean Cluster analysis. The above-mentioned applications highlighted 4 clusters of farms with a different profile, regarding the economic parameters mentioned above. Following this, the profile of the clusters was studied in relation to the gender of the beneficiaries, the geographical location of the farms and the proposed investment categories.

Key words: investments, financing programme, cluster analysis

Introduction

The demands of a modern globalised market for agricultural products render the imperative need for investments that aim to improve the competitive profile of agricultural farms (Galanopoulos et al., 2004; Zioganas, 2003). The Common Agricultural Policy (CAP) includes a whole range of policy measures for agricultural holdings, which aim, through subsidy schemes, to facilitate producers to invest in updated capital equipment (mainly modern mechanical equipment), and thus to improve both their effectiveness and productivity level. A major part of the investments made by Greek agricultural farms are partly financed by national resources, and the structural funds of the European Union. This funding is provided on the basis of investment plans (Commission of the European Community, 1985; Ministry of Rural Development and Food, 2003), which analytically described the investments to be made in the agricultural farms and the expected improvement of their financial results. The investment plans or “improvement plans”, as they are known, are tools to aid the transition of the existing structures of Greek agriculture, into more competitive business structures (Fennell, 1999; Galanopoulos *et al.*, 2004). For the farms whose Improvement Plan is approved, and where the main criterion is an increase of the agricultural income and level of employment, funding is provided at a percentage of the total invested capital. In order to receive financial support within the framework of this specific financing programme, the agricultural farms must fulfil certain conditions linked to their financial viability, based on the financial results included into their improvement plans or in their technical-economic report (Commission of the European Community, 1985; Tsiboukas et al., 2000).

A major opportunity to improve the competitiveness of Greek agriculture was the Operational Programme “Rural Development – Restructuring of the Countryside 2000-2006” and more specifically, the financing programme “Investments in Agricultural Holdings”. The basic object of the programme was to encourage investments in agricultural farms with the primary aim of creating the preconditions that would improve the financial level of the agricultural farms in combination with the sustainable development of the agricultural sector (Ministry of Agriculture, 2005). The beneficiaries of the programme are natural and legal entities or associated farms, or producer groups, who are active in the field of primary production, initial

processing and trade of agricultural or animal breeding products. The investment activities financed by the programme can include:

- farm buildings (e.g., stable facilities, barns, greenhouses) (K_1);
- machinery and other mechanical equipments (e.g. tractors, mechanical implements, plow) (K_2);
- purchase of livestock (K_3);
- land reclamation work (small irrigation projects, irrigation systems etc.) (K_4);
- establishment of multi-annual plantations (K_5);
- creation of small processing, standardization and trade units for items produced by the agricultural farms (K_6);
- environmental investments (K_7);
- expenses for improving the living and sanitary conditions of the livestock (K_8);
- technical support and research expenses (K_9);
- some other investments (K_{10})

The financial assistance is calculated as a percentage of the total cost of the investment (ranging between 40% and 70%), and can amount to EUR 225,000 per farm for a natural entity and EUR 600,000 per farm for a legal entity.

The aim of the present research is to examine the financing profile of Greek agricultural holdings, based on specific economic parameters that were stated and calculated in the Improvement Plans submitted to the competent Administrative Services of the Region of Central Macedonia.

The tasks of this research are:

- to develop farm clusters based on specific parameters of the investment plans;
- to estimate the relative importance of the parameters used to formulate the clusters;
- to describe the financial characteristics of each cluster;
- to explore the role of socio-economic parameters on the formulation of clusters;
- to identify the type and distribution of investments in the clusters;
- to identify the measures for improvement financial programmes in agricultural sector;
- to recommend specific agricultural policy actions for each cluster of farms.

The development of typologies for agricultural holdings, based on data concerning their financial activities, will allow us to better comprehend the relations and interactions that exist between the various factors affecting their development, and contribute to the social and economic growth of diverse geographical regions (Bernroider & Stix, 2006). On this basis, it will also be possible to formulate criteria and incentives for regional development, financing policies and taxation measures (Kobrich *et al.*, 2003).

Research methods

The clustering of agricultural farms based on economic and other parameters is of particular importance, since it can constitute a guide for evaluating their existing status and also for their financial support (Babic and Plazibat, 1998; Colson and Dorigo, 2004). In addition, it leads to the emergence of clusters of farms based on common or similar economic parameters, demands for production factors or even shared problems of development. Based on this data, it is possible to describe the financing profile of Greek agricultural holdings.

In order to classify and interpret the clusters of agricultural holdings, we have applied Hierarchical Cluster Analysis (Hair *et al.*, 1995, Coakes and Steed, 1999, Kinnear and Taylor, 1996). The cluster formation was performed based on the Ward criterion, while the square of the Euclidean distance was used to measure the (dis)similarity between the farms (Hair *et al.* 1995, Sharma 1996). The analysis was carried out by means of the statistical package SPSS ver. 11.5. The variables were transformed into z-scores. The stability of the results, in relation to the order in which the agricultural farms were entered into the analysis, was checked with the help of the software PermuCLUSTER ver.1.0 (Van der Kloot *et al.*, 2003).

The data used in this research are almost equivalent to a complete record of the Improvement Plans for agricultural holdings, which were submitted to the Region of Central Macedonia and were approved for funding. The data refer to the period 2001-2003 and involve agricultural farms located in the Prefectures of Thessaloniki, Pella, Imathia, Kilkis, Serres, and Chalkidiki.

In order to classify the agricultural farms into similar spatial units-clusters, four parameters have been that are also the criteria for the final approval of the improvement plans. These parameters are the final score

of the improvement plans, the level of public participation, the amount borrowed, and the own capital included into the improvement plans (Ministry of Rural Development and Food, 2005).

In order to examine the second level profile, qualitative economic and developmental parameters of the improvement plans were selected, as well as social characteristics of the farmers. More specifically, the examined parameters were the following:

- the gender of the farmers who submitted improvement plans to the Region of Central Macedonia;
- the geographic origin of the improvement plans;
- the type of investment.

The improvement plans are grouped together depending on whether the investments refer to farm buildings (stable facilities, barns, greenhouses etc.), machinery and other mechanical equipment (tractors, mechanical implements etc.), purchase of livestock, land reclamation work (small irrigation projects, irrigation systems etc.), establishment of multi-annual plantations, creation of small processing, standardization and trade units for items produced by the agricultural holding, environmental investments, expenses for improving the living and sanitary conditions of the livestock, technical support, and research expenses.

Results and Discussion

The application of "Hierarchical Cluster Analysis" highlighted four clusters of agricultural holdings. The K-Mean Cluster analysis showed that there are four (4) improvement plan clusters, with 45 (15.20%) plans belonging to the first cluster, 103 (34.80%) to the second, 5 (1.7%) to the third and 143 (48.30%) improvement plans belonging to Cluster 4.

The first level analysis of the groups, based on the parameters already defined, is presented in Table 1. Based on the determination coefficient (R^2) (Table 1), the relative significance of the variables, that were used to formulate the clusters, is in descending order: the participation of own capital, the amount of public participation, the participation of borrowed capital, and the final points given to the Improvement Plans.

Cluster 1 consists of agricultural farms whose improvement plans have an average score of 481.9 units, where the amount of investment equals to EUR 141,247.6, of which 51.4% is subsidized, 39.6% comes from loans and 9% is own capital. Cluster 1 includes agricultural farms with high investment plans, which have the highest public participation (subsidies) and the highest loans. Furthermore, we observe the lowest participation of own capital in these holdings, while they score high on the point system used for the approval process of the Improvement Plans.

Cluster 2 consists of improvement plans whose score is 442.3 units on average. The mean height of investments amounts to EUR 71,685.6, of which 50.7% is covered by subsidies, 6.75% by loans and 42.6% by own capital. The agricultural farms in Cluster 2 have small investment plans, with a limited public participation (subsidies) and lending, and a high participation of own capital. The farms in Cluster 2 score low on the point system of the Improvement Plan approval process.

Cluster 3 consists of improvement plans that present the highest score (482.48 units) and the largest investments (EUR 216,184.6). The farms in this cluster have the lowest level of subsidies contributing to the realization of the investment (estimated at 50.1%) and the lowest amount of loans (estimated at 3.7% of the investment), while the participation of own capital is the highest (with 46.2% of the investment based on own capital).

Cluster 4 consists of agricultural farms whose improvement plans have the lowest score (375.9 units) and which realize the smallest investments (EUR 46,303.9 on average). The participation of the public sector in this cluster is high (amounting to 50.7%), as is the participation of borrowed capital (31.5% of the total investment), while the participation of own capital is low (estimated at 17.8% of the total investment).

Then the second level profile of the four clusters was examined, in order to identify the effect of various socio-economic parameters on the formulation of the four clusters (Table 2).

Table 1

Financial characteristics of the clusters of agricultural farms

Clusters of holdings	Score	Amount of Public Participation (EUR)	Amount Borrowed (EUR)	Own capital (EUR)
Cluster 1				
Mean	481.91	72,541.21	55,930.83	12,775.54
Sample size	45	45	45	45
Standard deviation	71.34	24,527.71	21,189.45	16,206.71
Cluster 2				
Mean	442.30	36,344.09	4,809.51	30,532.02
Sample size	103	103	103	103
Standard deviation	61.59	12,896.64	8,466.98	12,127.31
Cluster 3				
Mean	482.48	108,382.13	8,011.40	99,791.07
Sample size	5	5	5	5
Standard deviation	52.88	25,135.57	17,914.04	14,410.40
Cluster 4				
Mean	375.92	23,449.06	14,605.73	8,249.13
Sample size	143	143	143	143
Standard deviation	64.70	10,499.61	13,390.01	7,804.61
R²	0.299	0.638	0.611	0.641

Source: Research results

The majority of improvement plans for the agricultural farms in Cluster 1 were submitted by men (75.6%) from the regions of Chalkidiki (53.3%), Kilkis (20%), Thessaloniki (13.3%), Pieria (6.7%), Imathia (4.4%) and Serres (2.2%). The investments regarded the purchase of machinery and other mechanical equipment (53.4%), the construction of farm buildings (21%), and the performance of land reclamation work (7.8%). It is worth noting that 6.6% of the expenses in the improvement plans are related to processing, standardization and trade units, while 4.3% refer to environmental investments.

The improvement plans of Cluster 2 were submitted by men (84.5%) from the regions of Pella (30.1%), Chalkidiki (26.2%), Kilkis (18.4%), Pieria (5.8%), Thessaloniki, and Serres (2.9%). The investments proposed in the average improvement plan of this cluster have to do with the purchase of machinery and other mechanical equipment (74.3%), improvement of environmental conditions (8.4%), construction of farm buildings (7.8%) and land reclamation work (6.3%).

Table 2

Second Level Profile of Clusters

Variable	Cluster 1 (C ₁)		Cluster 2 (C ₂)		Cluster 3 (C ₃)		Cluster 4 (C ₄)	
	No ¹	%	No ¹	%	No ¹	%	No ¹	%
Gender								
Man	34	75.6	87	84.5	3	60.0	120	83.9
Woman	11	24.4	16	15.5	2	40.0	23	16.1
TOTAL	45	100.0	103	100.0	5	100.0	143	100.0
Geographical region								
Thessaloniki	6	13.3	3	2.9	1	20.0	13	9.1
Chalkidiki	24	53.3	27	26.2	1	20.0	20	14.0
Serres	1	2.2	3	2.9	0	0.0	24	16.8
Imathia	2	4.4	14	13.6	0	0.0	17	11.9
Kilkis	9	20.0	19	18.4	1	20.0	11	7.7
Pella	0	0.0	31	30.1	1	20.0	47	32.9
Pieria	3	6.7	6	5.8	1	20.0	11	7.7
TOTAL	45	100.0	103	100.0	5	100.0	143	100.0
Investment Activity	EUR	%	EUR	%	EUR	%	EUR	%
Farm Buildings	29,678.3	21.0	5,591.4	7.8	23,992.3	11.1	3,508.4	7.6
Machinery and other mechanical equipment	75,462.4	53.4	53,222.4	74.3	146,609.3	67.9	37,199.1	80.0
Livestock purchase	296.7	0.2	0.0	0.0	7,134.1	3.3	0.0	0.0
Land reclamation	10,998.0	7.8	4,484.62	6.3	0.0	0.0	1,163.5	2.5
Multi-annual plantations	4,822.2	3.4	860.2	1.2	1,945.7	0.9	195.7	0.4
Processing-standardization-trade units of production	9,300.5	6.7	143.4	0.2	4,756.1	2.2	154.5	0.3
Environmental investments	6,100.6	4.3	6,021.6	8.4	30,233.8	14.0	2,968.3	6.4
Improving living and sanitary conditions of livestock	185.5	0.1	215	0.3	0.0	0.0	0.0	0.0
Technical support & research expenses	1,967.3	1.4	1,003.6	1.4	864.7	0.4	744.8	1.6
Other expenses	2,436.1	1.7	143.4	0.2	648.6	0.2	369.6	0.8
TOTAL	141,247.6	100.0	71,685.62	100.0	216,184.6	100.0	46,303.9	100.0

¹ Number of holdings

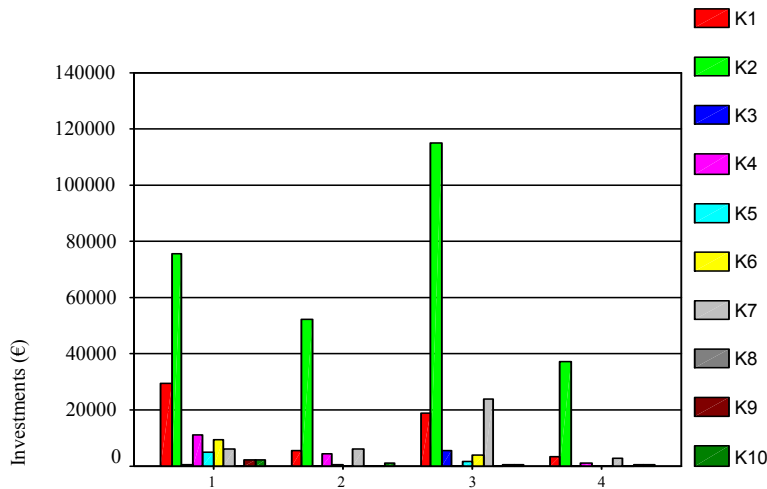
Source: Research results

The improvement plans of Cluster 3 were submitted by men (60%) and women (40%) from the regions of Thessaloniki, Chalkidiki, Kilkis, Pella and Pieria. The highest investments are made in this cluster, and they involve the purchase of machinery and other mechanical equipment (68%), environmental investments (14%), construction of farm buildings (11%), purchase of livestock (3.3%) and processing, standardization and trade units (2.2%).

The improvement plans of Cluster 4 were submitted by men (84%) from the regions of Pella (32.9%), Serres (16.8%), Chalkidiki (14%), Imathia (11.9%), Thessaloniki (9.1%), Kilkis and Pieria (7.7%). The smallest investments are made in this cluster, and they involve the purchase of machinery and other

mechanical equipment (80.4%), construction of farm buildings (7.6%), and environmental investments (6.4%).

The distribution of investments in the four clusters of farms is presented in the following figure.



Source: Research results

Figure 1. Distribution of investments in the four clusters

The first cluster includes agricultural farms with high investment plans, a high public participation (subsidies) and the highest amount of loans. The smallest participation of own capital is observed in these holdings. The farms of this cluster geographically are mainly located in the Prefecture of Chalkidiki, the beneficiaries of the farms are men in their majority, and the largest part of the total investment is employed for the purchase of machinery and other mechanical equipment, farm buildings and land reclamation work. These farms receive the highest score on the point system, yet present the most negative financial management profile.

The second cluster includes agricultural farms with limited investment plans, a low level of public participation (subsidies) and loans, and a high participation of own capital. Most beneficiaries in the farms of this cluster are men from the Prefectures of Pella, Chalkidiki and Kilkis, while the largest part of the total investment involves, in descending order: purchase of mechanical equipment, environmental works and construction of farm buildings.

The farms in the third cluster, achieving the highest score during the approval process, have the smallest participation of subsidies for realizing their investments, and the fewest loans, while the participation of own capital is the highest in this case. This cluster consists of the smallest number of holdings, with male beneficiaries being the majority, and the largest part of the total investment involves, in descending order: purchase of machinery and other mechanical equipment, environmental activities, and the construction of farm buildings. These farms present the best financial management profile, since self-financing is the primary source for realizing their investments. It is worth noting that there is a large percentage of female beneficiaries in this cluster.

The fourth cluster consists of agricultural farms, which achieve the lowest score during the approval process and have the lowest level of investments. The participation of the public sector is high in this cluster, as is the participation of borrowed capital, while the participation of own capital is low.

Conclusions and Recommendations

The present paper deals with the examination of the financing profile of agricultural investments and development of four clusters of farms with a different profile regarding the economic parameters. The above analysis and the farm clusters lead to the specification of the following concluding remarks and policy recommendations:

- The agricultural policy regarding the farms of the first cluster should be changed due to the high participation of borrowed capital in the proposed investments and the high participation of subsidies. More specifically, a reduction in financial support is required, which, when deemed necessary, should also be linked to specific actions, such as: an improvement in the financial management of these farms and the introduction of more “environmental” investments that would support sustainable development.
- Financial mechanisms that would support and improve the point system scoring of farms belonging to Cluster 2 should be developed in the framework of the agricultural policy. This is considered essential, since the analysis has indicated that these farms can potentially contribute to sustainable agricultural development, without wasting national and European financial resources.
- The policy measures should aim at the provision of additional support for the farms of the third cluster, which present the smallest wastage of resources. These farms should continue to receive support that can be linked to the promotion of the role of women in rural development, and the protection of the environment through the adoption of special measures.
- Finally, a reduction of subsidies is proposed for the farms of the fourth cluster due to the fact that these farms waste resources.

The present research and its final results are useful, since they present the way in which financing for agricultural farms is structured, and they also reveal the efficiency of financial support in Greece. In addition, this paper can help develop specialized agricultural policy measures that would use the formulated clusters as a basis and aim at the creation of business structures in agriculture and at sustainable rural development.

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Possibilities of the European Social Fund Projects for Regional Development in the Information Society

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Abstract

In the economic situation, when the market economy is introduced, the labour force should be capable to adapt to the labour market demands quickly. The skill to use modern technologies is one of the most important preconditions for adaptation. “The professional disparity of labour force to the requirements of labour market” is indicated as one of the weak points in SWOT analysis of Zemgale planning region development strategy, as well as human resources development as one of the priorities for the development of Zemgale. It is envisaged to improve also ICT educational programmes.

The Faculty of Information Technologies of Latvia University of Agriculture actively participates in the implementation of the EU projects carried out in collaboration with Jelgava municipality and IT leading enterprises. The aim of projects is to improve the availability of lifelong learning for adults and the groups of individuals, exposed to the risk of social rejection and the youth, to improve the professional orientation within the educational system, to facilitate the development of inclusive education in order to promote the engagement of labour force in the national economy by co-operating with social partners, and these results will improve the policy development and implementation capacity, and co-operation of the institutions, responsible for education and lifelong education.

The balanced development of territory will be ensured by supporting the availability of lifelong learning to the population at the development centres of national, regional and district levels, as well as in rural territories of all the planning regions, by supporting the availability of the respective education and obtaining of qualification to the individuals with functional disabilities and other individuals, which are exposed to the risk of social rejection.

Key words: lifelong learning, continuing education, distance learning, e-studies, regional development

Introduction

The Faculty of Information Technologies (FIT) of Latvia University of Agriculture (LLU) actively participates in the implementation of the EU projects carried out in collaboration with Jelgava municipality and IT leading enterprises. Jelgava Regional Education Centre for Adults (JRECA) is uptaking the financial support provided by the European Social Fund (ESF) for the project “*Professional education availability improvement for the disabled persons in Zemgale region*”. The aim of the project is to improve education availability for the persons with disabilities in Zemgale region. The project target group is the inhabitants of Zemgale at the working age – people with disabilities, which cause the limitation of their physical capabilities. Within the framework of the project several activities are to be carried out in collaboration with LLU and Association of Jelgava Producers and Marketers. Firstly, the two professional educational study programmes: Computer Systems Technician (3rd qualification level) and Programming Technician (3rd qualification level) are developed, which are adapted for e-studies. Secondly, JRECA e-study system is developed, which can be used for the pilot testing of these programmes.

The particular feature of the project is that disabled people can study at home, using the system of e-studies. E-studies are one of the modern elements of knowledge acquisition and obtaining qualification, which can be efficiently integrated into the traditional study process. It provides single and systematic e-study system, using all the study process. In order to prepare the classes of the courses and to evaluate, a standard method is necessary. E-study system can be used within the full-time study system as a support system of the traditional study process. The experts of information technologies, employed at LLU will help

to ensure the quality of the programmes and their compatibility with the Faculty study programmes. Graduates of the programmes have an opportunity to continue their education at the higher educational institutions. Often, when talking about the employment of disabled people, their lack of motivation to improve their own situation is emphasized, as well as the employers' preconceived attitude towards the employment of disabled persons is indicated. Therefore there will be informative seminars organized for business people within the framework of the project that would help the employers to understand the desires and possibilities of people with disabilities.

The next project, which is carried out at the FIT of LLU, is the ESF project "The Modernization of the Information Technology Study Programmes at Latvia University of Agriculture" (VPD1/ESF/PIAA/04/APK/3.2.3.2./0004/0067). This project is implemented in co-operation with the partners - joint-stock company "Datorzinību centrs" and Jelgava City Council (LLU, 2007). The project envisages the modernization of the master's study programme, implemented at the higher educational institution, in order to ensure the modern acquisition of knowledge for the economic growth within the important fields. The modernisation of the system of higher education and adults' continuing education is one of the ways to achieve the priority set by Single Programming Document – Facilitation of the Development and Employment of Human Resources. The aim of the project is to modernise and to supplement with new study trends the master study programme "Information Technologies" (implemented at the FIT) for the full-time studies, oriented towards the solution of interdisciplinary problems, as well as to create the preconditions for the start of part-time studies at the study programme, and an opportunity of e-studies.

The activities, planned within the framework of the project, will facilitate the preparation of IT specialists in such fields as computerized production control systems, systems analysis and information technologies in biosystems, taking into consideration that IT specialists are demanded not only in IT companies, but also in other sectors of economy, because no sector of economy can be developed without modern and qualitative IT solutions of problems. For the development, introduction and application of such IT solutions the experts of the respective qualification are needed, who possess the knowledge of both IT field and the particular sector of economy. Very significant aspect of the project is the introduction of distance learning teaching methods for the implementation of full-time and part-time study processes at the Faculty of Information Technologies. E-studies are one of the modern elements of knowledge acquisition and obtaining qualification, which can be efficiently integrated into the traditional study process.

The research hypothesis - e-studies function as the instrument of society integration, because it reduces the social difference, making the studies more available irrespective of the student's age, place of work and residence, working hours and other factors. The aim of the research is to develop the recommendations for the introduction of the form of e-studies for the full-time and part-time studies that would facilitate lifelong learning provide the programme graduates with an opportunity to acquire knowledge and practical skills regarding the use of the latest information technologies. In order to achieve the aim, the following objectives were set:

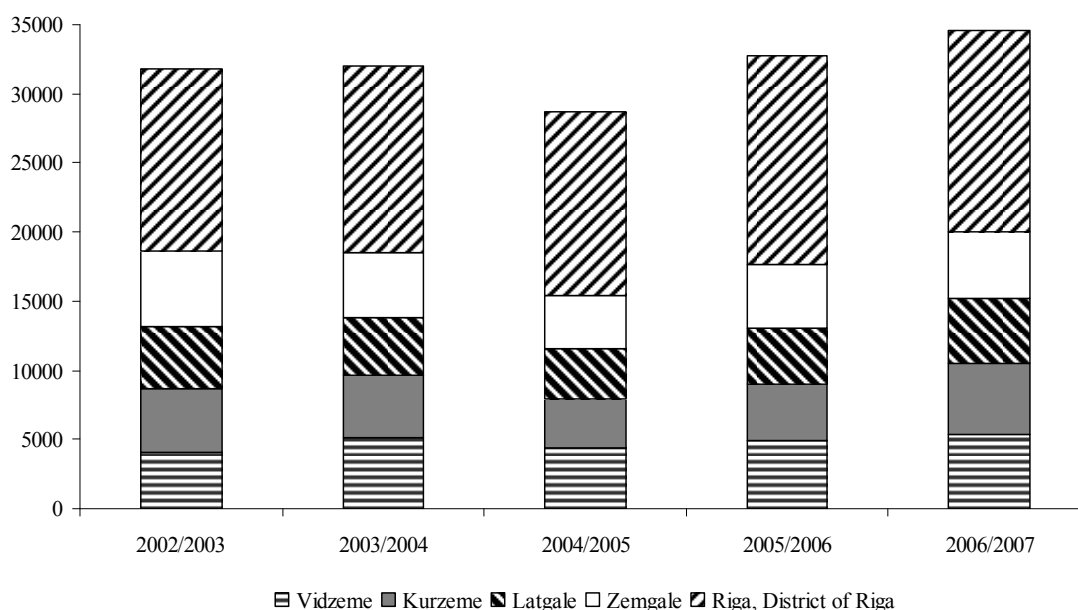
- to analyse the distribution of students according to the regions of Latvia;
- to analyse the role of lifelong learning, continuing education, distance learning and e-studies for the implementation of the full-time and part-time studies and their influence on the regional development;
- to analyse the results of ESF projects regarding the development of e-studies at the FIT of LLU.

The teaching staff from the leading higher educational institutions in IT field and the teaching staff from the commercial training centres of Latvia are involved in the improvement of the study programme, therefore it is expected that the teaching materials will be of high quality, and thus the teaching aids and teaching methodology will be interesting not only for the students studying at LLU, but also for those studying at other higher educational institutions of Latvia. Within the period of the implementation of this project, the improved study programmes will be used at other higher educational institutions of Latvia, because the teaching materials are envisaged to be prepared as the materials for e-studies and to place them on the server for e-studies. The server of e-studies of the FIT is connected to the internet network; therefore the materials of e-studies, prepared within the project, through Internet would be used by the students of other higher educational institutions.

The improved programmes will prepare IT specialists, who will facilitate the use of IT for the business activities carried out in Zemgale region and would increase the competitiveness of services and products supplied to the markets of Latvia and Europe.

The dynamics of the number of students in the regions of Latvia

According to various studies, the differentiation between the developed and underdeveloped regions of Latvia increases more and more. Therefore it is very important to implement in practice the regional reform in Latvia, which has been discussed during the last years very actively. The determined direction of state strategy in the field of education might be one of the important instruments for the reduction of regional differences and a good impulse for the national development on the whole. The dynamics of the number of students, matriculated for the undergraduate studies at higher educational institutions, in the regions of Latvia from the study-year 2002/2003 to the study-year 2006/2007, is presented in Figure 1 (IZM, AIP, 2006, 2007).



Source: Figure is developed by the authors

Fig. 1. The proportion of students, matriculated for the studies at higher educational institutions in the regions of Latvia

As it was established during the previous years, that the students from the respective region choose the higher educational institutions that are located near their place of residence, and 80-85% of students, studying at such higher educational institutions as Daugavpils University, Rēzekne Higher School, Liepāja Pedagogical Academy, are the residents of the respective region. Recently established higher educational institutions, such as Ventspils University College and Vidzeme University College, and the branches of some higher educational institutions, especially the branches of Riga Teacher Training and Educational Management Academy in Cēsis, Madona, Jēkabpils, Saldus, Kuldīga and Liepāja, as well as the branches of several higher educational institutions, founded by legal entities, offer study opportunities in fact for the inhabitants of all regions and districts. Gradually the supply of study programmes is diversified, and the quality of programmes improved, thus creating the preconditions for the growth of creative people in the region.

In order to study the relations between the number of students and particular regions, there was the proportion of students, matriculated at higher educational institutions, was analysed according to their place of residence in the study-years 2005/2006 and 2006/2007 (Fig. 2).

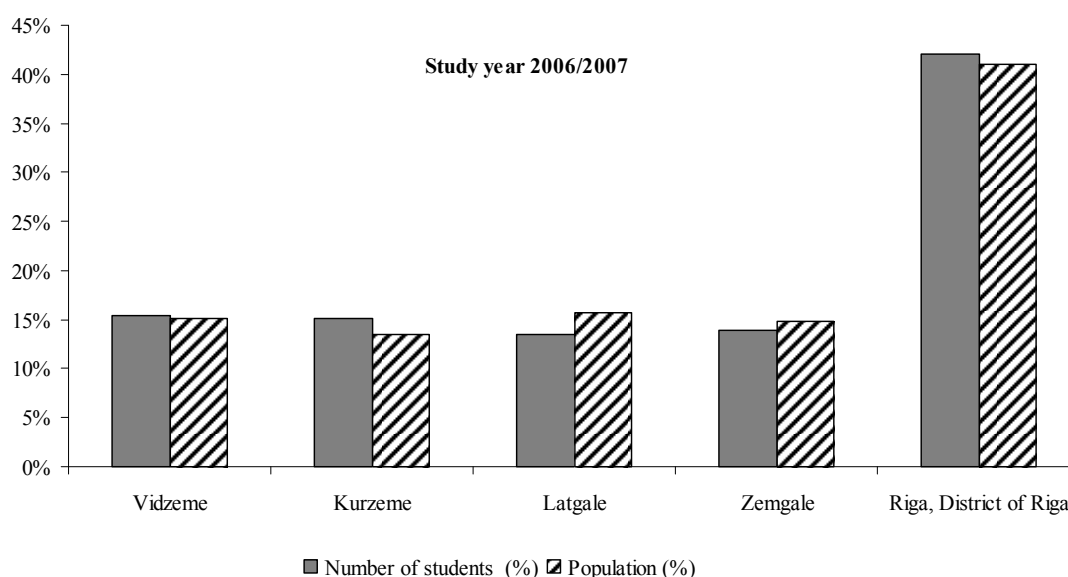
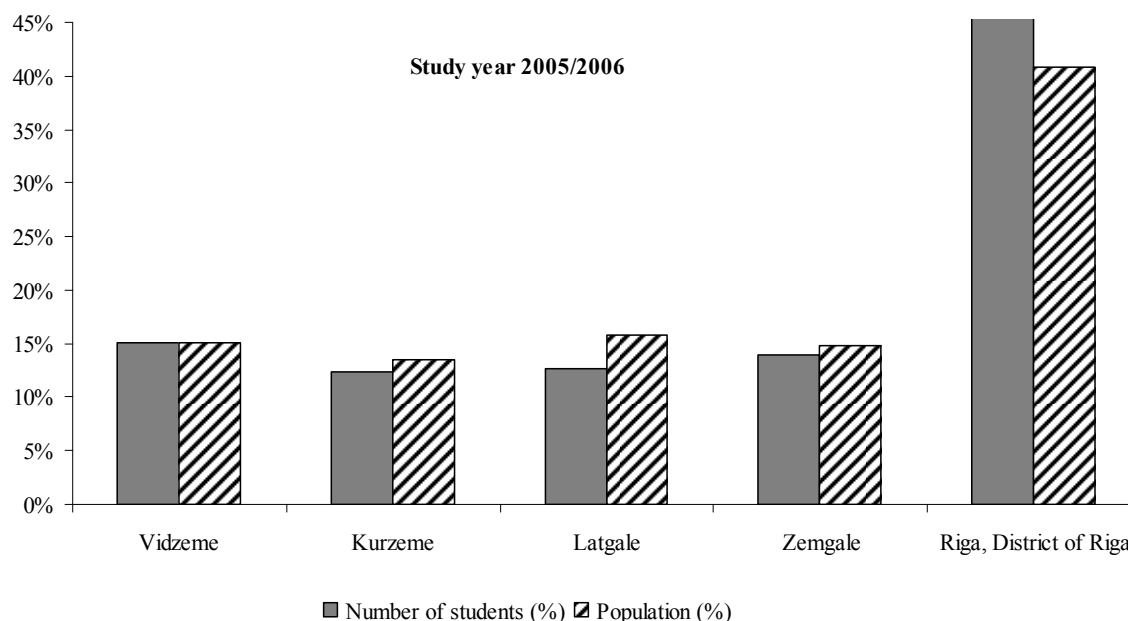
As we can see in Figure 2, the distribution of the number of enrolled students according to the regions in fact is proportional to the distribution of population, except Latgale, which is proved by Wilcoxon Signed Ranks Test ($p\text{-value} > 0.7$). We can draw a conclusion that on the whole there are no particular regional differences regarding the number of students. At the same time the proportion of students in Riga City and the District of Riga is more significant than the proportion of population. In comparison to the study-year 2005/2006, in the following study-year of 2006/2007, the proportion of students increased in Kurzeme and exceeded the proportion of population, thus indicating the development of the region, but in Riga City and the District of Riga the proportion of students decreased in comparison to the proportion of population. At the same time the number of students from Latgale at the state higher educational institutions and those of legal entities in total proportionally is less than the number of population. It proves the necessity of a special support, including support to higher education, for the less developed region of Latvia. The EU regional development funds could be an efficient instrument for the solution of this problem.

Lifelong learning, Continuing education, Distance learning and E-study in full-time and part-time studies

The policy of lifelong learning in Latvia is based on the idea that the individual personal growth, self-development at each stage of life, in all spheres of life within one's lifetime should be facilitated, thus creating the preconditions for everybody's initiative, the development of adaptation abilities and achieving the social inclusion, employment, and active civic participation. Formal education, non-formal and everyday education within the policy of lifelong learning are equally important and supplement each other by enriching the learning culture, experience and by broadening the educational environment at the individual, community and society levels. Lifelong learning is an essential factor both for the reduction of the regional differences of Latvia and the improvement of life quality, and the promotion of society integration, particularly emphasizing that the continuing education provides the working age individual an opportunity to acquire and perfect knowledge and skills, to obtain or improve professional skills, mobilizing the human resources for the sectors of national economy. The basic skills form the ground for the obtaining of qualification, continuing education and employment, and thus it is a particularly significant component for the facilitation of the capacity for labour of the population, exposed to the risk of social rejection. Particular attention should be paid also to the availability of the appropriate education for the individuals with functional disabilities. Professional orientation and career education help to make the motivated choice at an individual level and corresponding to the needs of society for the continuation of education and the choice of profession.

In conformity with the draft law "On Higher Education":

- **lifelong learning** – educational process within one's lifetime, motivated by the society changing needs and adults' necessity to acquire knowledge, skills and competences, and the experience within the context of employment, social and personal growth. It includes formal, non-formal and everyday learning;



Source: Figure is developed by the authors

Fig. 2. The proportion of students, matriculated for the undergraduate studies at higher educational institutions in the regions of Latvia

- **continuing education** – the continuation and perfection of previously obtained education in conformity with the requirements of labour market and the interests of personality perfection;
- **distance learning** – form of education acquisition, characterized by the teaching materials specially structured for the self-educational purposes, individual learning pace, the assessment of progress specially organized for the self-educational purposes, as well as the application of various technical and electronic means of communication.

The methods of distance education can be used for both full-time and part-time studies. It should be noted that part-time and full-time studies are the types of studies with different amount of credits for a term or academic year, as well as with different amount of contact time within the study process. The summary of the types of studies and the forms of education acquisition is presented in Table 1.

Table 1

Types of studies and forms of education acquisition

Type of studies	Full-time studies	Part-time studies
Form of education acquisition and amount	Contact time	
	- the communication of academic staff and students, which is carried out for the achievement of the aims and objectives of higher education in conformity with the curricula of higher educational program.*	
	40%-50% of the amount of academic lectures.	10%-20% of the amount of academic lectures.
	Distance learning	
- form of education acquisition, characterized by the teaching materials specially structured for the self-educational purposes, individual learning pace, the assessment of progress specially organized for the self-educational purposes, as well as the application of various technical and electronic means of communication.*		
	50%-60% of the amount of academic lectures.	80%-90% of the amount of academic lectures.

* - the draft law "On Higher Education", September 11, 2006

Source: Table is developed by the authors

Distance learning very often is viewed as a type of studies without continuous and direct contact between the student and the lecturer, or distance learning is considered to be extra-mural or part-time studies. Namely, distance learning is considered to be a type of studies, instead of being a form of education acquisition. The methodology of distance learning comprises printed texts, audio or video recordings, tutorials, communication by mail, CD-ROM, e-studies and m-studies (a version of e-studies, when a cellular phone is used). E-studies and m-studies are one of the modern elements of knowledge acquisition and qualification obtaining, which can be efficiently integrated into the traditional study process in the form of distance learning. E-studies is a specially organized study course, where electronic technologies are used. As a result there is an opportunity to use efficient, on IT based ways of information preparation and presentation, ensuring closer interaction between students, lecturers and higher educational institution. Distance learning is based on three closely related principles: opportunity to study from distance, openness and wide availability, flexibility and adaptation (RTU, IZM, 2003).

Unfortunately, not all the above mentioned principles are implemented within the study process, therefore the introduction of e-studies is one of the most important preconditions for the introduction of qualitative distance learning form. Taking into consideration the rapid increase of tuition fee, the increase of the payment for the public services and the increase of price to be paid for food, many students have to stop their studies due to the lack of finances. It is difficult to combine studies and work, and it mostly negatively influences the quality of studies. Therefore one of the solutions could be the use of e-study system within both full-time and part-time study processes. The main difference is the process of the preparation and publishing of teaching materials. In order to ensure unified and systematic use of e-study system within all study process, it is necessary to have unified methodology for the development and evaluation of study courses. The objective of the methodology is to provide suggestions and proposals for the lecturers and management of the faculty, in order the content and the tools of information technologies, and the procedure

could ensure the availability of e-study materials always and everywhere, where there is Internet accessible. Within the system of full-time studies, e-study system can be used as a support system for the implementation everyday study process. In order to implement the master study programme of part-time studies, it is necessary to prepare the part-time study programme and to adjust the teaching/learning methodology of e-studies for the part-time studies. In this case at the first lecture or seminar the lecturer should provide students with information on the website of e-study system, how to work with e-study system and what activities are expected from the students within the framework of e-study system.

Conclusion

The results of the collaborative project give the significant contribution to the sustainable economic and social development of Latvia. The activities of the project promote the improvement of the modernization of educational system, providing the basis for the modern ICT knowledge and skills acquisition in conformity with the increase of labour market demands, and thus contributing to the development of the important economic sectors of all regions. In order for e-studies to be successful; there are specially prepared and well-considered teaching materials and the plan for the support of studies, which had been planned in advance. When the e-study course had been planned and developed, it should be introduced and implemented within the unified study process. Before the implementation of courses, it should be considered that the teaching staff has had enough time for ensuring the support of e-studies. Only in the case of timely, constructive and active communication between a lecturer and a student (for example, publishing of teaching materials, answers to students' questions, asked in an electronic form, checking and comments of assignments), e-studies will achieve the expected results. The students should feel that they do not acquire the study course as a result of self-instruction, using previously published teaching materials, but in a form of e-studies, which means an opportunity of electronic dialogue between the lecturer and the student, as well as the students of the respective group.

The results of ESF project will improve the availability of lifelong learning for adults and the groups of individuals, exposed to the risk of social rejection, and the youth, improve the professional orientation within the educational system, facilitate the development of inclusive education in order to promote the engagement of labour force in the national economy by co-operating with social partners, and these results will improve the policy development and implementation capacity and co-operation of the institutions, responsible for education and lifelong education. The results of ESF projects will facilitate the implementation of polycentric development model in lifelong learning and special education. The balanced development of territory will be ensured by supporting the availability of lifelong learning to the population at the developmental centres of national, regional and district levels, as well as in rural territories of all the planning regions, by supporting the availability of the respective education and obtaining of qualification to the individuals with functional disabilities and other individuals, which are exposed to the risk of social rejection.

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Income, Consumption and Living Condition in Rural Areas of Latvia

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Abstract

There are two surveys carried out by the Central Statistical Bureau of Latvia – Household budget survey and the survey “Community Statistics on Income and Living Conditions” that both together provide comprehensive information on income, consumption expenditure and living conditions in Latvia.

The Household budget survey (HBS) was launched in 1996, but the survey “Community Statistics on Income and Living Conditions” (abr., EU-SILC) – in 2005. Therefore the only possibility to analyse the data and results of both surveys together is for the year 2005.

The main objective of HBS is to estimate the level and structure of income and expenditure in the country in total as well as by type of locality. The main aim of the EU-SILC is to provide comparable and systematically obtainable Community statistics on living conditions of population in all the EU member states. At the same time large-scale information on different aspects influencing welfare: household composition, housing conditions and household income was obtained in the EU-SILC survey. Those aspects and indicators improve the information on households living conditions, and therefore it is interesting and useful to compare and analyse the results of both surveys together.

The study focuses on the analysis and comparison of income and expenditure level, and structure of urban and rural households as well as housing conditions and self-assessment of economic situation. Differences in living conditions for households from different regions of Latvia are analysed in the research.

Key words: living conditions, standard of living, private consumption, disposable income, regional development

Introduction

One of the ways to provide information on living condition and living standards of society is to collect the survey data on household consumption and income. Since 1996 the Central Statistical Bureau of Latvia has carried out the Household budget survey (abr., HBS). The main objective of this survey is to estimate the level and structure of income and expenditure in the country on the whole as well as by type of locality. The data obtained of HBS have been aggregated by the country as whole, urban and rural areas, as well as in 7 major cities and Riga separately.

Another source of information is the survey “Community Statistics on Income and Living Conditions” (abr., EU-SILC). The main objective of this survey is to provide comparable and systematically obtainable Community statistics on living conditions of the population in all the European Union member states. The first EU-SILC survey in Latvia was carried out by the Central Statistical Bureau of Latvia in 2005. Therefore the first possibility to analyse the data and results of both surveys together is for the year 2005.

Certainly every economist is interested in the evolution of living conditions over the time and on their distribution over households. Unfortunately we do not have the possibility to analyse these data over the time due to the availability of only one year in the EU-SILC survey data, yet we have the possibility to analyse the distribution over households. This article dwells upon the main analysis and the main results made for urban and rural households as well as for rural households of different regions of the country.

The Methodology of Household Budget Survey and EU-SILC Survey

The Methodology of the Household Budget Survey

The Household Budget Survey is a sample survey that occurs without interruption, and the information from households is collected all the year round. The basic statistical unit of HBS is a household – a person or group of persons tied by relationship or other personal relation, who live together in the same dwelling and share expenditures. The annual household sample is evenly distributed over the main territories and time.

The method of sampling is a two-stage stratified random sample. Households were stratified by the degree of urbanisation, and the sampling frame is the dwelling database (made on the basis of Population census 2000 and Population register data). The Population census enumeration areas are used as the primary sampling units.

During the survey two types of questionnaires were completed: the *Diary of Household Consumption Expenditure* (filled in by the respondents themselves) and the *Households Questionnaire* (completed by the interviewer in an introductory interview and in a final interview).

In order to generalize information from sample to population the weighting procedure was taking into account. The determination of sample weights was done as follows:

- the inclusion probability of each household and its corresponding design weights were calculated;
- for each stratum the designs weights were adjusted according to the actual response rate in each week;
- the weights were calibrated taking into account the demographic data about the gender and age of people living in Riga, other cities and towns, and rural areas.

During the final interview an interviewer asked questions about different sources of income for household and each of the members. The reference period is different for different sources of income. The previous month is the reference period for compensation for labour, net-income from entrepreneurial activities and self-employment, scholarships, pensions and several social insurance benefits. At the same time previous 12 months are the reference period for income from property and rent, income from seasonal work or logging, local government assistance, alimonies, income from sale of goods, monetary assistance given to other households and other income. All the information on income is summarised and generalised as disposable income of the year 2005. There were 7429 households involved in 2005, 3774 households participated, while in 2004 there were 6534 households involved, and 3934 households participated.

The Methodology of the EU-SILC Survey

The two-stage sampling design was also used in the EU-SILC survey: addresses were stratified by the degree of urbanisation and the sampling frame is the dwelling database (made on the basis of Population census 2000 and Population register data). The Population census enumeration areas are used as the primary sampling units. Addresses were used at the second stage of sampling design and selected with inclusion probabilities proportional to the level of non-response. All households and persons living in the selected addresses were surveyed.

During the survey three types of questionnaires were completed: the *Household Register* and the *Household Questionnaire* (both completed by interviewing the head of the household or a person responsible for common issues of the household) as well as *Personal Questionnaire* (completed by separate interviewing of each household member).

There were 5813 households included in the sample of EU-SILC 2005, 3843 of those households participated in the survey. 8079 persons lived in the surveyed households, 7913 of those persons answered the questions of *Personal Questionnaire*.

The questions on different time period were asked in questionnaires – current month, previous calendar year, last 12 months, previous weeks etc. The previous calendar year is the reference period for different sources of income– the EU-SILC 2005 comprised the questions on income gained in 2004.

In order to generalise all the data obtained in the survey, the design weight for the address (equal to the inverse of inclusion probability) was corrected in each primary sampling unit. After that the weights were calibrated in each stratum at the level of a household (according to the demographical data: age, sex and regions of Latvia).

Disposable Income

In both surveys disposable income is defined as income in cash, and the cash value of goods and services obtained in kind, received in form of wages and salary, other income for work, transfers, net income from entrepreneurial activity and agricultural production, income from property, rent etc.

Analysing the methodology of both surveys – Household budget survey and the EU-SILC survey – it becomes clear that actually the data of both surveys cannot be compared: there are different reference periods and different data collections methods. At the same time it was interesting to examine the data of both surveys in order to analyse the difference between urban and rural areas.

In further analysis the data of HBS 2004 and the EU-SILC survey 2005 are used, since they both provide the information on disposable income gained in 2004.

Table 1

	Disposable income, 2004			
	LVL, monthly average per capita		In per cent	
	HBS	EU-SILC	HBS	EU-SILC
Latvia	101.23	100.20	100.0	100.0
Urban	112.34	112.05	111.0	111.8
of which Riga	135.24	134.65	133.6	134.4
Rural	77.84	75.33	76.9	75.2
Kurzeme	76.45	75.26	75.5	75.1
Zemgale	81.04	74.30	80.1	74.2
Latgale	57.03	61.36	56.3	61.2
Vidzeme	75.02	66.91	74.1	66.8
Pierīga	102.85	95.04	101.6	94.9

Source: HBS 2004-year data and the EU-SILC 2005-year data, authors calculations

We can find that the two surveys show approximately the same result for the whole country – in the HBS monthly disposable income per capita LVL 101.23, while in the EU-SILC – LVL 100.20 (Table 1). Also both surveys show that disposable income per capita in Riga is more than one third higher than in the whole country. At the same time disposable income in rural areas is only 77% or 75% of the country average level (according to the results of the HBS and the EU-SILC).

The poorest households are found in rural areas of Latgale – for those households disposable income is only 56% or 61% of the country average level (according to the results of the HBS and the EU-SILC). The data of both surveys compiled in Table 1 show that the households in populated areas near Riga (Pierīga) have the highest disposable income in rural areas. The average net salary in 2004 being the highest, and the results of HBS showing the income from labour forms amounting to 56% of disposable income (for all rural households the income from labour forms equals to 51% of disposable income)¹ explain the regularity in this region.

Consumption expenditure

The information on the consumption level and structure is one of the main aims of household budget surveys. This is the main point of interest also in Latvian household budget survey.

Table 2

	Consumption expenditures, 2004	
	LVL, monthly average per capita	In per cent
Latvia	114.08	100.0
Urban	128.00	112.2
of which Riga	151.30	132.6
Rural	84.75	74.3
Kurzeme	84.18	73.8
Zemgale	85.79	75.2
Latgale	67.40	59.1
Vidzeme	89.07	78.1
Pierīga	101.39	88.9

Source: HBS 2004-year data and the EU-SILC 2005-year data, authors calculations

Table 2 shows that in 2004 the average monthly consumption expenditure per capita was LVL 114.08. Similar to disposable income also the consumption expenditures in Riga are by one third higher than

¹ HBS 2004-year data, authors' calculations

for the whole country (132.6%). At the same time consumption expenditure in rural households is only three fourth of the country average level (74.3%).

The lowest consumption expenditure level is for the rural areas of Latgale – 59% of the average consumption expenditure level for the whole country. The highest consumption expenditure level in rural areas is observed in Pierīga – 89% of the average level of Latvia (Table 2).

The three priorities of consumption expenditure are:

- expenditure on food (including also expenditures on non-alcoholic beverages);
- expenditure on housing (including expenditures on housing, water, electricity, gas and other fuels);
- expenditure on transport.

Table 3

Expenditures on food and non-alcoholic beverages, 2004

	LVL, monthly average per capita	In per cent	The share in consumption expenditures
Latvia	34.90	100.0	30.6
Urban	36.01	103.2	28.1
of which Riga	38.30	109.7	25.3
Rural	32.55	93.3	38.4
Kurzeme	31.61	90.6	37.6
Zemgale	34.32	98.3	40.0
Latgale	31.72	90.9	47.1
Vidzeme	32.06	91.9	36.0
Pierīga	32.73	93.8	32.2

Source: HBS 2004-year data, authors calculations

The expenditure on food – the average monthly food expenditure per household member amounting to LVL 34.90 - has been the main priority in consumption in 2004 as well as in the previous years (Table 3). The variation in food expenditure is in range of 10% - the highest expenditure on food is observed in Riga (LVL 38.30), while the lowest – in the rural area of Kurzeme – LVL 31.61.

The share of expenditures on food in total consumption is another interesting indicator. For the country this share is less than one third (30.6%), in Riga - one fourth (25.3%), but in the rural area of Latgale the share of expenditures on food is nearly one half – 47.1%.

The expenditure on housing is the second major group of expenditures. In 2004 housing expenditures in the whole country equalled to LVL 14.41 or 12.6% of all consumption (Table 4). In urban areas housing expenditure are LVL 17.87 or 14%, but in rural areas – LVL 7.12 or 8.4% of all consumption. At the same time households in rural areas on average spend on housing only half of the amount spent by households in urban areas. The households in rural areas of Latgale spend the smallest amount per capita per month - LVL 5.41 or 37.5% of the average country amount.

Table 4

Expenditures on housing, 2004

	LVL, monthly average per capita	In per cent	The share in consumption expenditures
Latvia	14.41	100.0	12.6
Urban	17.87	124.0	14.0
of which Riga	20.74	143.9	13.7
Rural	7.14	49.5	8.4
Kurzeme	6.62	45.9	7.9
Zemgale	7.60	52.7	8.9
Latgale	5.41	37.5	8.0
Vidzeme	7.26	50.4	8.2
Pierīga	8.96	62.2	8.8

Source: HBS 2004-year data, authors calculations

The expenditure on transport comprises the third group of expenditures. In 2004 the average Latvian household per capita per month has spent LVL 13.60 or 11.9% of the consumption expenditures (Table 5).

The highest level of transport expenditures is spent by households of the rural area in Pierīga (the territory around Riga) – LVL 18.23 (this is approximately by one third higher than for the whole country). The lowest expenditures on transport are spent by rural households in Latgale – these households spend LVL 7.00 per capita per month (or 51.5% of the average expenditures on transport in the country), also the share of expenditures on transport in the rural areas of Latgale is the smallest – 10.4% of consumption (this result is not surprising, since almost one half of consumption is spent on food).

Table 5

Expenditures on transport, 2004

	LVL, monthly average per capita	In per cent	The share in consumption expenditures
Latvia	13.60	100.0	11.9
Urban	14.53	106.8	11.4
of which in Riga	18.06	132.8	11.9
Rural	11.64	85.6	13.7
Kurzeme	11.66	85.7	13.9
Zemgale	10.54	77.5	12.3
Latgale	7.00	51.5	10.4
Vidzeme	11.76	86.5	13.2
Pierīga	18.23	134.0	18.0

Source: HBS 2004-year data, authors calculations

Conclusions

Many questions on housing conditions were included into the EU-SILC survey. 50.1% of all rural households live in a detached house and 31.5% in an apartment or flat in a building with 10 or more dwellings (in urban areas – 12.5% and 75.6% respectively).

At the same time only 56.5% of households in rural areas and 85.1% of households in urban areas have a bath or a shower. Also only 56.6% of households in rural areas and 86.7% of households in urban areas have an indoor flushing toilet. Every second household (or 49.1%) in rural areas has a dwelling with leafing roof, damp walls, floor or foundations, or rot in the window frames or floor. The worst situation with the dwelling quality is observed in the rural areas of Zemgale – this is a problem for 61.2% of all households. This is a problem also for 33.4% of households in urban areas. It means that the supply of dwellings and their condition is better in urban areas than in rural ones.

Many questions on household financial situation and social exclusion risks characterising living conditions were also included into the EU-SILC survey. One of them is about the possibility to afford paying for one weak annual holiday away from home. A positive answer was given by 22.5% of households (in Riga – 31.5%, in urban areas – 16.3%) in the whole country. The lowest percentage is seen in rural areas of Vidzeme – 13.3% (approximately the same level is also observed in rural households of Latgale (13.6%) and Zemgale (13.9%)). We can see that there is still a gap between living conditions in urban and rural areas.

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Changes of Lithuanian Foreign Trade of Agricultural and Food Products in the Context of the EU Integration

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Abstract

This article analyses the changes of Lithuanian foreign trade of agricultural and food products in the context of the EU integration. Lithuania is a small open market, thus its economy largely depends on foreign trade. The statistics indicate that agricultural and food sector plays a significant role in Lithuanian foreign trade. The role of agricultural and food sector in Lithuanian economy and foreign trade is characterized by: higher share of agricultural and food sector in the gross domestic product (GDP); higher share of export of agricultural and food products in the total export of Lithuania; and higher share of import of agricultural and food products in the total import of Lithuania.

Analysing the problems of Lithuanian agricultural and food products development it is necessary to analyse foreign trade conditions. Seeking to define the ways for improvement Lithuanian foreign trade of agricultural and food products, the article deals with the analysis of the conditions of nature, structure and changes of foreign trade after Lithuania became a member of the EU. The paper argues that it is necessary to analyse the changes of exports when seeking to solve development problems of Lithuanian foreign trade of agricultural and food products. Thus the study determines the main problems of export development and the ways of solving problems.

Key words: foreign trade, export, import, agricultural and food products

Introduction

The globalization and integration processes have opened additional possibilities for development of foreign trade. Lithuania is a small open market, thus its economy largely depends on foreign trade. The development of foreign trade encourages structural changes of economy, facilitates making close economic contracts with businessmen of other countries, and adjusting better to the market conditions. Lithuanian integration into the EU has opened huge possibilities for Lithuanian foreign trade. It was determined that recently the export of Lithuanian goods to the EU countries and import from the EU comprised the biggest share of all export and import.

The agricultural sector in Lithuania is more significant than in the neighbouring countries due to the fact that it has legal land management and cultivation traditions traced back to the medieval ages, as well as agriculture-favourable natural relief and climatic conditions. A significant share of Lithuanian GDP is created in the agricultural and food sector. At present agriculture comprises 4.6% of the gross national product, and 17% of employment (Agriculture as a part of the country's economy, 2006). The high employment rate in agriculture is a direct result of low productivity and the prevalence of tiny subsistence farms. Despite the low productivity, Lithuania is almost fully self-sufficient in food products. The statistics indicate that agriculture plays a crucial role in the country's economy, and the food still plays a vital role in private consumption.

The development of agriculture and rural areas in terms of economic, ecological, social and ethno-cultural development is a state priority area. The policy of agriculture and rural development is established in strategic agriculture and rural development documents approved by the Seimas and the Government of the Republic of Lithuania in Long term Development Strategy, Agriculture and Rural Development Strategy (Long-term Strategy of Lithuanian Economic Development by 2015, 2002). The increase of production volume and efficiency, modernisation of farms, introduction of higher quality requirements, decrease of trade barriers had influenced the balance of agricultural and food product trade. At present agricultural and food production constitute the major part of Lithuania's exports, since it is valued for high quality in the most developed countries of the Western Europe.

The aim of this research is to analyse the changes of Lithuanian foreign trade of agricultural and food products in the context of the EU integration. Seeking for this aim, the following research tasks had to be accomplished:

- to analyse the role of agricultural and food sector in the national economy and foreign trade;
- to perform the analysis of nature, structure and changes of Lithuanian foreign trade related to agricultural and food products in the context of the EU integration;
- to present the ways for improvement Lithuanian foreign trade of agricultural and food products.

The object of the research is Lithuanian foreign trade of agricultural and food products.

The methods of research are: analysis and synthesis of the scientific literature discussing the problems of foreign trade, the systematic statistical data analysis of Lithuanian foreign trade of agricultural and food products.

The role of agricultural and food sector in Lithuanian economy

The gross domestic product (GDP) is one of the most important indicators according to which national or sector economic development is assessed. Foreign trade can affect the level of economic growth of national economy. Alongside with unemployed recourses an increase in export sales will lead to an overall expansion in production and an accompanying fall in the unemployment rate. Conversely, the economic growth can affect the types of goods a country is able to trade (Husted S., Melvin M., 2004).

GDP produced by agriculture and food sector shows the role of this sector in the national economy and foreign trade. The share of GDP produced in agricultural sector in 2000–2006 has decreased as shown in Table 1. In 2006 agriculture constituted 4.6% of GNP, while the increase of the whole GNP was 14.7% as compared with the previous year (Table 1).

The indicator ‘GDP per capita’ enables to evaluate the achieved level of economic development and, respectively, the living standards in different countries. This indicator is often used to make international comparisons. It is also important in evaluating the impact of individual sector of national economy on living standards. GDP per capita created by agricultural sector in 2000–2006 has increased by 22.4% and in 2006 reached LTL 1105.8 per capita (Table 1). In 2006, the total GDP per capita was LTL 24132.

Table 1

The changes of agricultural sector role in Lithuanian economy in 2001-2006

Indicators	Year						
	2000	2001	2002	2003	2004	2005	2006
GDP at current prices, million LTL	45848	48563	51948	56772	62440	71380	81905
The share of agricultural sector in the country's GDP, per cent	6.9	6.2	6.1	5.6	5.2	5.1	4.6
GDP per capita at current prices, LTL	13101	13950	14975	16436	18174	20906	24132
GDP per capita created by agricultural sector, LTL	903.6	869.4	924.9	932.7	949.6	1057.3	1105.8

Source: Agriculture as a part of the country's economy, 2006; Gross domestic product in 1995-2007, 2007; Main indicators of economic and social development in 1996-2006, 2007

Although farmers do not keep up with the accelerating growth of the industry, the quantities and qualitative results of production, purchase and foreign trade of agricultural products in 2006 are rather high. The analysis shows that total agricultural production at current prices in 2000-2006 has increased by 6.7%; although crop production has decreased by 16%, but the production of animal products has risen by 38.1% (production of meat products by 27.2%; production of milk products by 9.6%). In the presence of rich harvest, the purchase of agricultural products highly increased, except for sugar beet, whose purchase declined in 2000-2006 by 309 %. A high increase of other agricultural products is evident: 97.5% more of grain, 83.7% more of vegetables, 53.8% more of livestock and poultry (in live weight), 41.6% more of milk, 20.1% more of fruit and berries was purchased (Purchase of agricultural products, 2007).

The production of food products grew in 2000-2006 as well the production of agricultural products. It was determined that the production of sausages and smoke meat products in Lithuanian companies in 2006 had increased by 37.5% (in comparison with 2000); the production of meat and meat sub-products had grown by 106.6%. In 2001-2006 yogurt production rose by 217.5%; the production of spirits and liqueurs –

by 77.8% and the production of sparkling grape wine – by 74.7%. But the production of butter, and other fats and oils derived from milk had declined by 39.2% (Production of commodities, 2007).

This situation had influence on Lithuanian foreign trade of agricultural and food products.

Nature and structure of Lithuanian foreign trade of agricultural and food products

Analysing the changes of foreign trade after Lithuania became a member of the EU, it has been identified that the import of goods has increased. The growth of imported goods was initiated by the increased domestic demand. It was determined that import of consumption goods had increased the most rapidly and in 2006 the import of those goods had comprised 17.8% of the import structure according to the classification of Macroeconomics categories. Import increase of these goods was initiated by rapidly growing borrowings, as due to the competition, loan terms in banking sector improved, though the average interest rate in the national currency increased. It was identified that after eliminating duties for imported foodstuffs and beverages from the EU countries the prices of these products decreased and consumption increased, so, for this reason the import of these goods increased.

The analysis of Lithuanian foreign trade of agricultural and food products in 2000-2006 showed that in the export and import of these goods had increased (Table 2).

In 2006 Lithuanian export of agricultural and food products accounted for 13.9% of the total exports, while import of the same agricultural and food products accounted for 9.3% of the total Lithuanian imports. As compared to 2000, the export of agricultural and food products increased by 304.5% and import – by 201.6% (Table 2).

The analysis of Lithuanian foreign trade marketable structure showed that in 2006 as in the previous years, the majority of exported agricultural and food products were dairy products. Export of dairy products comprised 26% of all exports of agricultural and food products. Lithuanian dairying and dairy production industry is better developed and has a high quality level in comparison with the neighbouring countries. Grain export totalled to 9.9%; prepared animal feed export – to 9.1%; tobacco – 8.2%; fish and fish products – 6.2%; meat – 8.5% (Farming and food production, 2007).

The import of such food products and agricultural production to Lithuania that are not produced or raised in Lithuania, for example, spices, coffee, tea and fruit (especially citrus fruit and other fruit from the warm countries) and vegetables. In 2005 the imported agricultural and food products comprised: 10.2% of fruit and nuts, 7.8% – non-alcoholic and alcoholic drinks, 5.7% – oil, 7.4% – meat, 4.3% – sugar and sugar confectionary products, 4.1% – coffee, tea and seasonings, 4.7% – tobacco and tobacco products, 2.8% – animal feed. The biggest part of imported fruit comes from the warm climate countries (citrus fruit, bananas, grapes and others) (Farming and food production, 2007).

Table 2

The main indicators of Lithuanian foreign trade of agricultural and food products in the period of 2000-2006

Indicators	Year						
	2000	2001	2002	2003	2004	2005	2006
Export, million LTL	1339	1642	1935	2355	2956	4213	5416
Exports share of agricultural and food products in the total export, %	8.8	9.4	9.5	10.6	11.5	12.9	13.9
Import, million LTL	1642	1816	2210	2381	2955	3693	4953
Imports share of agricultural and food products in the total import, %	7.5	7.1	7.7	7.9	8.5	8.6	9.3

Source: Exports and imports by CN section in 2000-2003; Exports and imports by CN section in 2004; Exports and imports by CN section in 2005, Exports and imports by CN section in 2006

It was determined that Lithuania traded mostly with other EU countries. Trade in agricultural and food products with other EU countries accounts for 73% of all trade in this group of products (Table 3).

The data in Table 3 shows that compared to 2002, exports to the EU have increased by 373%, while imports from the EU have increased by 275.3%. The largest trading partners among the EU countries are:

Germany (14.0% of the total volume), Latvia (12.1%), Poland (9.3%), Estonia (5.9%) and the Netherlands (7.5%) (Farming and food production, 2007).

Lithuania mostly exports milk and milk products, grain, animal feed, fish and meat products to the EU. Fruit and vegetables, non-alcoholic and alcoholic drinks, oil, meat, fish, coffee, tea, seasonings and other products are the most common products imported from the EU.

Table 3

Lithuanian foreign trade of agricultural and food products by trading partners in 2002-2005, %

Groups of countries	Export				Import			
	2002	2003	2004	2005	2002	2003	2004	2005
EU	38.0	34.0	71.8	73.3	51.0	46.0	77.8	77.9
CIS	19.0	28.0	23.3	21.4	6.0	8.0	8.6	7.0
USA	2.9	2.4	2.1	0.8	2.2	2.1	1.9	3.2
Other countries	40.1	35.6	2.8	4.5	40.8	43.9	11.7	11.9
Total	100	100	100	100	100	100	100	100

Source: Lithuanian foreign trade in agricultural and food industry, 2007; Farming and food production, 2007.

The analysis of foreign trade of agricultural and food products to the EU after Lithuania became a member of the EU shows that the EU trade policy and implementation of its principles had influence on the marketable structure of Lithuanian export and import. The EU trade policy is based on: 1) WTO attitudes and is formed on the basis of unilateral, bilateral and multilateral decisions; agreements of free-trade, cooperation agreements with Mexico, the Mediterranean Countries, 2) agreements of economic cooperation with Argentina, Brazil, Paraguay, Uruguay and general preference system; 3) trade with Japan, Australia, New Zealand, the USA and Asian countries refers to the principles of the WTO, and there are no special agreements; 4) the sovereign favour of trade principles, abolition of quantitative restrictions, applied to the former Soviet Union countries. Quotas for limitation of textile import from Russia, Belarus, Ukraine and Uzbekistan are applied.

In order to make sure the implementation of solid foreign trade policy, Lithuania applies custom tariffs, quantitative limitations, tariff quotas and other means of foreign trade regulation to the third countries, which the EU applies: customs; agricultural duties, fixed implementing common agricultural policy; preference tariff means applied according to the Community agreements made with separate countries or country groups, ensuring preference tariff regime; preference tariff means, applied by the Community ex-parte to some countries, country groups or territories; autonomic suspension means, defining decrease of some customs and duties or release/concessions applied to certain goods; other tariff means applied when implementing other law acts of the Community.

The European Union gives a right for poorly developed countries and for developing countries to use common preference system (CPS), allowing more favourable conditions of trade. According to the established order of states evaluation the list of countries to which CPS is applied is composed. This system allows ensuring that preferences will be provided just for the countries, which belong to the developing or poorly developed group of countries. Also, possibility of allotment of additional preferences is foreseen in the regulation for the countries participating at certain programmes of the EU, the so-called special incentive agreements seeking to improve work conditions, conservation. Also, additional preferences are foreseen for the countries, which are participating at the programme of fight against drug production.

Mercantile relations of the EU with the third countries are regulated by bilateral and multilateral agreements and obligations to the WTO. After Lithuania became a member of the EU these agreements have become valid in our country, for this reason it is important to know what kind of changes are waiting in the sphere of foreign trade, and forecast possible influence of these changes. Analysing the changes of import and export after Lithuania became a member of the EU it was determined that the change of trade regime had made the biggest influence on Lithuanian trade with the third countries, which are not members of the EU.

Difference of applied customs basically is related to the following reasons: 1) economically strong countries have applied preferences to import from the countries, where economy is developed lower. The difference of applied customs appeared due to the reason that the preference customs were set for Lithuanian (as lower developed country) goods import to these countries (for example, the USA), whereas preferences were not applied to goods import from the EU; 2) Lithuanian and some EU countries signed bilateral agreements, which define exclusive conditions (i.e., according to bilateral agreements for imported goods

from Lithuania and EU to separate countries different custom tariffs were applied). In this case export changes appeared that after Lithuania joined the EU, customs tariffs, which a foreign country applied to imported goods, were applied to goods exported from Lithuania; 3) however, there were no changes of goods export to Russia. Due to the fact that the EU does not apply preferences according to the common preference system (CPS) towards imported goods, for this reason import from Russia “became higher”. Since the USA applied preferences to import of Lithuanian goods and did not apply preferences to goods from the EU, so after Lithuania’s accession to the EU the export of goods to the USA “made a jump”. Lithuania has foreseen customs tariff preferences for trade with Belarus and the EU that applied preferences according to CPS for imported goods from Belarus. Therefore after applying CPS there was a proportional rise of prices for imported goods from Belarus. Whereas there were no changes of export after Lithuania joined the EU, as Belarus applied the same import customs tariff for goods from Lithuania.

Problems and ways of for the improvement of Lithuanian foreign trade of agricultural and food products

The fact that after Lithuania joined the EU there remained no trade barriers in the EU market and export payments were paid for agricultural and food products exported to the third countries had the greatest effect on the growth of export. For this reason the main export problems have to be analysed and the ways for solving problems have to be foreseen.

Exporting of production causes many problems: it is difficult to foresee in which country economic decline would appear (this is followed by bankrupts, credits for goods); to evaluate the reliability of partners (because part of it does not pay for goods in time); shortage of circulating resources and so on.

The researches reveal the fact that there are quite enough specific and typical to export problems in activities of exporting companies: seeking for partners in foreign markets, and establishment of trade agencies; problems of product application to foreign markets, necessity of specially prepared staff for foreign activity; more complicated forms of payments, transport organisation forms, and documents not applied in the domestic market and so on. National exporters, striving for successful activities in foreign countries, have to analyse and estimate possible commercial and political risks, which show untrustworthy of partners, possible bankrupts, and state economic and political conditions of the foreign countries. With the intention of solving risen problems more successfully and becoming equal competitors in foreign markets Lithuanian producers of agricultural and food products should: strategically plan part of export in company’s future activity, understand the mission and vision of export; collect the information on various markets and quickly react to the changes in volatile situations; safely and estimated choose export management type and partners; apply contemporary quality management forms; apply maximum of equipment for product modification, and pay attention to the importance of package and services, etc.

In order to improve the conditions of foreign trade, export support system of state should be used. Export support system of every country is unique, national export support forms are very different, yet all of them can be divided into: financial support means (to insure export credit, use preferential crediting, and undisguised and latent subsidising) and non-financial support means (information about foreign trade conditions; development of business relations between trade partners; promotion of international cooperation). Direct participation of the country in the national export support system shows not only a country’s determination to take up part of credit risk falling to exporter, but also makes a possibility to regulate this system in order it is easy to implement the country’s political aims. The main role is played by financial support systems, where export credit insurance is the most significant. The researches reveal the fact that only 17% of Lithuanian producers of food products insure export credits.

According to the EU legislation regulating the insurance activity of export credits, participation of government should be confined by taking responsibility for those export transactions, which are not forbidden by the insurance companies due to possible amount of losses especially when long-term sponsorship of export appears. Credit insurance mechanism arises due to the improving export credit insurance problem of effective export. This problem is analysed according to two aspects: choosing export credit growth mechanism that can evaluate the needs of insurance products and services offered by a country’s economy subjects; and finding out which level the country’s economy subjects use for offered insurance products and services trying to entrench at foreign markets. Participation of a country in this process should be limited by taking responsibility for those export transactions which are not forbidden by private insurance companies due to the reason of possible amount of losses especially in the sphere of long-

term lending. Classifying insurance types into supported by the state and not supported by the state, favourable conditions to reduce risk and get bank credit would be made to exporters. The state, indirectly subsidising exporters, would take export credit risk; then it would overtake the exporter's risk for state supported insurance types and export credit insurance agency – for state non-supported insurance types.

Therefore, encouraging export development of agricultural and food products, it would be purposeful to improve the export credit insurance system. Thus the experience of the EU countries should be used and according to the country's economic conditions the most suitable export credit insurance model should be chosen.

Conclusions

1. The analysis shows that agriculture plays a crucial role in the country's economy and the food still plays a vital role in private consumption. The increase of production volumes and efficiency, modernisation of farms, introduction of higher quality requirements, decrease of trade barriers had influenced the balance of agricultural and food products trade. At present agricultural and food production constitute the major part of Lithuania's exports.
2. Lithuanian integration into the EU has opened huge possibilities for foreign trade of agricultural and food products. At present the role of foreign trade for agricultural and food products in Lithuanian economy has increased: in 2006 the exports share of this sector accounted for 13.9% of the total national exports and imports share accounted for 9.3% of the total national imports.
3. The analysis of Lithuanian foreign trade marketable structure showed that in 2006 as in the previous years, the majority of exported agricultural and food products had been dairy products. Export of dairy products comprised 26% of all exports of agricultural and food products. Lithuanian dairying and dairy production industry is better developed, and has a high quality level in comparison with the neighbouring countries.
4. It is determined that Lithuania trades mostly with other EU countries. Trade in agricultural and food products with other EU countries accounts for 73% of all trade in this group of products.
5. The analysis of foreign trade of agricultural and food products to the EU after Lithuania joined the EU shows that the EU trade policy and implementation of its principles had influence on the marketable structure of Lithuanian export and import.
6. The researches reveal the fact that there are quite enough specific, and typical to export problems on micro and macro levels. The companies and state using National export support system can successfully solve the main export problems.
7. Encouraging export development of agricultural and food products it would be purposeful to improve the export credit insurance system. Thus the experience of the EU countries should be used and according to a country's economic conditions the most suitable export credit insurance model should be chosen.

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State Regulation of Agricultural Policy: Lithuanian case

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Abstract

The article aims at the examination of the State regulation of Agricultural policy in Lithuania in the context of economic integration into the European Union (EU). The economic integration processes have significantly changed all spheres of economic activities, including agriculture.

The object of the study is the pattern of Agricultural policy in Lithuanian economy. The aim of the study is to reveal the major determinants affecting the pattern of Agricultural policy in Lithuania. The content involves such questions as: characterization of the Agricultural policy implementation process in Lithuania in the process of economic integration into the EU; analysis of economic influence of Agricultural policy on the development of Lithuanian agriculture and rural economy; and the examination of the instruments of economic influence for agricultural sector.

At present, on global level, the issue of Agricultural policy and its instruments convergence across the EU emerges. The key element of economic development in each country is people, who in growing globalization conditions seek better quality of life. The research has shown that:

- there are strong bounds among export and import of agricultural products, gained credits, common financial support to agricultural sector, the income of rural population, direct payments, support to manufacture and an employment in agricultural sector;

- there are weak bounds among the amount of agriculture products manufacture, average size of farmers' farms, average income and profits.

Key words: Agricultural policy, Common agricultural policy (CAP), competitiveness of agriculture.

Introduction

The accession of Lithuania to the EU among other nine countries (Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Malta, Poland, Slovakia and Slovenia) on May 2004 is a very important act of international recognition for Lithuania and its future development, including agricultural development and the instruments of agricultural policy as factor of economic development. Agricultural policy in a country on micro, macro and regional level during the time perspective causes economic development, and is very important for each country or country groups.

At present, emerging market countries in Europe face many new factors in their economic development, and these factors modify economic development in those countries. Direct (supranational institutions: the World Trade Organization, the EU regulate national markets) and indirect (competitive pressure, lower regulations, higher capital investment, loss of some national identity) changes in economic development of individual countries are ripples triggered by changes in global economic development.

The role of agriculture as an activity in the structure of Lithuania's gross domestic product (GDP) is decreasing. The income of rural population, where the main source of income is producing agricultural products, is significantly smaller than the income of population living in the town. It is important to identify factors that are affecting Lithuanian agriculture development and rural population income level growth in the context of economic integration into the EU.

The article analyses the changes of the main agricultural and rural economic indicators, implementing the present state policy and EU Common Agricultural Policy (CAP). The main hypothesis of the paper:

- the share of agriculture is decreasing in both the EU-15 and in the EU-12 new member states, while the efficiency of the sector is growing;

- the new CAP and its free market policy in the agricultural sector affects positively its development.

The object of the study is the pattern of Agricultural policy in Lithuanian economy. The aim of the study is to reveal the major determinants affecting the pattern of Agricultural policy in Lithuania. The following **major tasks** were set in order to achieve this aim:

- to characterize the process of implementation of Agricultural policy in Lithuania in the process of economic integration into the EU;

– to show economic influence of Agricultural policy on Lithuanian agriculture and rural economy development;

– to examine the instruments of economic influence on agricultural sector.

The research methods in the paper include: logical comparative analysis and synthesis, the analysis of statistical data, based on the synthesis of the official EU publications, scientific literature and systematic statistical data analysis.

The changes of agricultural policy in Lithuania in the context of integration into the EU

Lithuania, as a small country, is attributable to open economies. The country takes an active part in international trade in all spheres of economic activity and all forms of international economic relations. The factors of economic, social and political development are closely bounded in the activity of Lithuanian agricultural sector, due to this multifunctional character and objective to provide with own agricultural products, it is considered as a priority of the activity in the country (The Long-run Lithuanian Economy Development Strategy, 2002:5). The village is ranked increasingly as the infrastructure of country, which predetermines living standards both in towns and rural populations.

Table 1

The comparison of agricultural sector regulation means in Lithuania and the EU-15 applied by 2004

Means	Lithuania	EU-15
Intervention buy up	-there were no clear market criteria for using this mean; - government often bought up all the products, thus not allowing market functioning for a price, at which the government could not sell	-the mean was used under the loss conditions of farming; -government bought up only the excess of products, which the market could not absorb
Subsidies for prices and direct payments	-widely used subsidies for buy up prices; - since 2000 direct payments have been used (meat and sugar-beet production)	-after MacSharry reform in 1992 the subsidies of procurement prices had decreased; -the decrease of farmers income is compensated by direct income
Private storage	-was not used	-is widely used
Compensation payments of land use limitation	- were scheduled in 1994, but not used	-pay out for large-scale farmers on condition that they will not use 15% (or more) of their farm's land

Source: European Economy, 2006:100; Trarieux, 2007: 5

The expansion of government intrusion into the agriculture as economic activity according to the amount of financial assistance till 2004 gained a form of social security; although not a form of market regulation. The priorities of government regulation policy of economic relations in agriculture were to sustain the employment level in the countryside and safeguard minimal level of farmers' living standards. These priorities did neither encourage the productivity of agricultural products manufacture nor decrease the excess of this production. The comparison of agricultural sector regulation means in Lithuania and the EU-15 used by 2004 are shown in Table 1.

The farmers in Lithuania, as a social part of society, have weight political influence (the part of rural population is about 33.3%, the share of employed population engaged in agriculture and services for agriculture of the total number of employed population is about 11.5%, the average salaries in agricultural sector are 20% lower than the average salaries in the industry (Agriculture in Lithuania, 2006: 4-5). The strategy of agriculture and rural development as part of Long run Lithuanian Economy Development Strategy states that the living standards of rural and city population would assimilate by 2015 (2002: 36).

The regulation of agricultural sector is carried out by achieving two purposes: firstly, to support agriculture as activity manipulating by the prices of agricultural products; secondly, structural policy, restructuring this activity, seeking enlargement of its efficiency (Nugent, 2003: 388-392). According to Danish Institute of Agricultural and Fisheries Economics, increasing direct payments from CAP, the effect of this would be an increase in prices of food and land (IPTS/ESTO Studies on reforms, 2002: 10-12), it would

raise a severe financial crisis in the EU financial perspectives and would necessitate land reform, which seriously decrease the living standards of the many subsistence farmers. Government non-intervention policy into the agricultural market is favourable if all countries are keeping the same rules (Mankiw, 2000: 115-118). If the rules of regulation and support are different, then in open economy in the international market there would not be equal conditions for competition.

The practice shows (ABARE, 2000; Bache, 2006: 214-217) that the liberalization of agricultural market would be useful for different country groups because they could implement a specific advantage, and would create realistic stimulus to increase the efficiency of concrete participants of agricultural products manufacture chain or to change the character of activity. As the result of liberalization policy, the price level will fall; and the income of producers will increase (Bache, 2006: 215). Total world benefit from the agricultural support policy reduction on the world level would be the growth of world gross domestic product for about USD 53 billion by 2010. According to the position of free market exponents (Šimašius, 2000; Žaldokas, 2005) the agricultural policy of the EU is: only waste of resources, the support of small part of society in the country, as the expense of taxable population, conditioning the composition excess of agricultural products. The analysis of scientific literature shows that another part of academic estimates leads to the conclusion that if there were no the EU CAP, then many rural territories in Europe would suffer from considerable difficulties in economic, environmental and social spheres.

The changes of agricultural policy in the EU

The tendencies of agricultural activity in the EU countries are very similar: the share of agriculture in GDP and employed population engaged in agriculture as well as services for agriculture of the total number of employed population are decreasing. These processes also take place in other highly developed countries in the world. In 2003 the adopted EU CAP reforms orientated into three main agricultural sector development ways: the competitiveness of agriculture; improving the environment and the countryside; improving the quality of life in the countryside and stimulating diversification of economic activity in rural areas. The reform had changed the way, in which the EU supports its farmers. The new CAP is oriented towards the requirements of consumers and taxpayers who are producing according to the market demand.

Experience of the EU-15 countries shows that the two related processes occur: the enlargement of farms and diminishing of their number. At present the rational size of farms is developing; forming effective use of material, technical and labour resources. At the beginning of CAP, it was oriented to big EU budget part (80.6% of the entire EU budget in 1973). At present this part, as shown in Table 2, is considerably lower (45.7% in 2005). The share of GDP in the EU-15 was created in agriculture till 2004 and was less than 1%. It is supposed that this tendency will remain in the future and the share of the total agricultural product in the EU will diminish to 0.33% by 2013. These processes show the growing efficiency of activity in the sector. The EU average monthly salary indicates the changes of life quality in the rural locations, as shown in Table 2.

Table 2

The main characteristics of the EU CAP and its results in Lithuania

Characteristics and results	1995	1997	1999	2001	2003	2005
1. EU budget expenditure for CAP, %	51.2	50.6	49.3	49.2	46.5	45.7
2. EU average month salary in agricultural sector, EUR	1240	1411	1466	1574	1748	1897
3. Share of agriculture, forestry and fishery in GDP in Lithuania, mill. EUR	859.0	1057.7	857.6	870.3	1011.4	1014.8
4. Share of agriculture, forestry and fishery in GDP in Lithuania, %	17.9	15.2	11.4	10.4	6.1	4.9
5. Export of agriculture, forestry and fishery in Lithuania, mill. EUR	574.3	715.9	437.0	581.3	682.1	1220.2
– share of export in GDP, %	7.6	7.1	3.5	4.1	4.2	5.9
– share of export in all export, %	18.3	16.0	12.6	11.7	11.1	12.8

Source: The Community budget ..., 2000; General budget of the European Union ..., 2005; Agricultural statistics, 2007; Agriculture in Lithuania in figures, 2007.

The improvement of agricultural development is the base done by the EU CAP. The EU CAP evolved from agricultural subsidies to supply healthy and safe food environmental, production quality and animal welfare. In the future the EU will continue the CAP by diminishing the amount of subsidies. The results of the EU CAP are shown in Table 3.

Table 3

The comparison of agricultural sector development in Lithuania and the EU

Country	Lithuania	Ireland	France	EU-27	EU-15	EU-12	EU-25
1. Average physical farm size, ha	11.0	31.8	48.7	11.9	21.4	5.5	16
– % farms <5 ha	51.4	7.0	26.0	71.5	54.6	82.9	61.6
2. Ratio: farmers <35 y.o. / >55 y.o.	0.1	0.17	0.23	0.12	0.10	0.14	0.15
3.% long term unemployment in IR*	4.34	1.41	3.57	4.5	3.72	6.67	4.54
4.% of farmers with basic or full agricultural training	30.9	30.7	54.3	20.0	22.5	18.2	26.3
5. Labour productivity in agriculture, EUR	24	121	241	12.552	189	22	127

*IR – intermediate region: if 15% to 50% of the population of the region live in rural local units

Source: Rural Development in the European Union, 2007

The economic policy implemented in Lithuania is based on the currently efficient export-oriented model overtaking development. The success of economic development of Lithuania, as a region, depends on its human capital, traditionally viable agriculture with satisfactory natural conditions, favourable for transport and international trade geographical situation. The analysis shows that the level of efficiency in agriculture is low; there is a broad gap between the rural and urban population in respect of their income, working conditions, social security and other services. The government policy of agriculture implements the objectives of agricultural market and the development of its subjects.

The correlation analysis of Lithuanian agricultural sector is done using the main indicators of the sector which shows that there exist:

- a weak (>0.7<0.9) bound among agricultural products manufacture and direct payments (0.7) and direct payments (0.71);
- a strong bound (>0.9) among gross value added per one employee and agricultural and food products export (0.957) and import (0.924), average income per one rural household (0.913);
- a direct weak bound (<0.9) among gross value added per one employee and farmers' income and direct payments (0.863), credit with guarantees (0.744), paid export subsidies (0.681); indirect weak bound (<-0.9) among gross value added per one employee and employment (-0.894), average annual number of employees engaged (-0.859);
- a very weak bound (<0.6) among gross value added per one employee and gross value added in agriculture, services for agriculture (0.493).

The growth of Lithuanian agricultural production, agricultural products and food export are related to free movement of goods in the EU and with export support to the third countries. The competitiveness of farmers in Lithuania significantly lags behind the EU farmers in productivity, income and size of farms.

Conclusions, proposals and recommendations

The paper identifies Agricultural policy in Lithuania in the process of economic integration into the EU, and shows its economic influence on the development of Lithuanian agriculture and rural economy. The study of statistical data of agricultural sector in the EU and Lithuania indicates similar tendencies and specifics of economic development. Agricultural market and regulation of its subjects are the most important factors for the sector development under the EU CAP reform adopted on June 2003, which orients farmers to produce according to the market requirements. The EU CAP is currently appreciated as fulfilling its role, and its implementation is a precondition for equity and efficiency performance in the EU-12.

The correlation analysis was done for the main indicators of agricultural sector (such as agricultural products manufacture, agricultural products export and import, export subsidies, credits, total financial support for agriculture, average size of a farm, income in the countryside, income of farmers, direct payments, average investment, profit and unemployment).

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Structural Pensions in Polish Agriculture - the first Experiences in the EU Member Conditions

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Abstract

The aim of the paper is to examine the first experiences of the implementation of the measure of structural pensions for farmers in Poland. The studies of performance and effects of the measure showed that the farmers were very interested in participation in it. The assumed limit of farms that could retire was achieved. The influence of the scheme on farm structure was formally positive but the signals that the former farm owners continue the agricultural activity appear makes results rather disputable.

Key words: structural pension, preferential credits, agricultural policy

Introduction

To improve the competitiveness of the food sector and support the sustainable development of rural areas in Poland the package of measures (in the frame of Pillar II of CAP) called “Rural Development Plan for 2004-2006” was introduced in 2004 just after the EU accession. It was financed from EAGGF and state budget. Among different programmes there was a programme of structural pensions for acceleration of the process of overtaking farms by younger farmers. The general aim of that measure was the transfer of the farms to younger persons who were better educated, better prepared for farming, and open for changes and development. That measure with some modification will be continued in 2007-2013 in the frame of Rural Development Programme for 2007-2013.

The aim of the paper is to examine the first experiences of the implementation of the measure of structural pensions for farmers in Poland. The analysis ought to show the role of the tool of agricultural policy in maintaining the structure of family farms. The period of examination of operating the scheme is short, yet it seems to be possible to indicate its weaknesses and advantages.

The Central Statistical Office of Poland and the Agency for Restructuring and Modernisation of Agriculture, which is responsible for the running the measure are the main sources of data.

The descriptive method of analysis supported by statistical methods was used for the study.

The analysis starts with presentation of the changes of farm structure by area and of other processes that the Polish agriculture was undergoing in the period 1990-2004. It is followed by the presentation of some measures that were introduced before Poland’s accession to the EU which should have helped to accelerate the structural changes in the agriculture. Next, the characteristic of the structural pensions is given. After this, the results of the measure with the critical comments are presented and conclusions are drawn up.

The economic background of the implementation of structural pensions

Polish agriculture entered the market economy with more than two million farms. The average total area of family farm amounted to 7.2 ha. More than 50% of farms owned less than 5 ha of arable land (Table 1). Many farms had their land divided into many small plots. Up to 2004 (the year of Poland’s accession to the EU), after 14 years of operating in the market economy, the farm structure had not change noticeably. The number of farms decreased by 15%, while the average total farm area increased by 16%. For comparison, in the same period in Finland, the number of farms decreased by 44% and average farm area increased by about 80% (Väre M., 2005). Besides the decrease of number of farms, the structure of farms by area worsened. The share of smallest farms (of area less than 5 ha) rose by 6 percentage points whereas the share of medium size farms declined. The increase of share of the farms exceeding 15 ha is a positive change.

Table 1

Private farms in Poland - number and structure by area in 1989-2004						
Specifications	1989	1995	2000	2003	2004	2006
Private farms exceeding 1 ha of agricultural land (in thousand)	2,143.0	2,048.0	1,880.9	1,850.0	1,851.8	1,806.4
Private farms by area groups (%)	100	100	100	100	100	100
1.01 – 4.99	52.8	54.6	56.4	58.8	58.2	57.0
5.00 – 9.99	29.8	26.7	23.8	22.1	21.7	23.0
10.00 – 14.99	11.3	10.7	9.9	9.2	9.6	9.4
15 ha and more	6.1	8.0	9.9	9.9	10.5	10.6
Average arable land area in farm (ha)	6.3	6.7	7.2	7.4	7.5	7.6

Source: GUS, Statistical Yearbook of the Republic of Poland 1990, 1996, 2007

Most of Polish farms are run by farm families, so the problems with the transfer to the next generation occur. For the viability of agriculture not only farm successions but also the well timed retirement is crucial (Kimhi A., Lopez R., 1999). However, Väre (2005) noticed that earlier analyses made by researchers concerned rather the type than the timing of retirement and as the timing of retirement is expected to determine significantly the characteristic of structural change in agriculture it is important to find out how the characteristic of farm affects the timing of elderly farmers' decision. Furthermore, it is important to examine how agricultural policy accelerates the process of handing over the farms to the next generation.

Table 2

Farms' structure by area and age (%)												
	1996					2002						
	Area structure					Area structure						
Age (years)	1-5 ha	5-10 ha	10-15 ha	15 and more ha	total	Age (years)	1-5 ha	5-10 ha	10-15 ha	15 and more ha	total	
18-44	39.4	48.0	54.8	59.8	44.3	<25	2.1	3.4	3.8	3.5	2.7	
45-65 (60 women)	37.7	39.1	38.5	36.1	37.8	25-34	13.3	16.4	17.9	19.1	15.0	
65 (60 women) and more	22.9	12.9	6.7	4.1	17.9	35-44	24.3	28.6	31.5	34.5	26.9	
Total	100	100	100	100	100	45-54	28.2	31.1	32.5	32.6	29.7	
						55-65 (60 women)	15.2	12.0	10.0	8.1	13.3	
						65 (60 women) and more	16.9	8.5	4.1	2.1	12.4	
						Total	100	100	100	100	100	

Source: GUS, Statistical Yearbook of Agriculture and Rural Areas 2000 and 2005

In the last decades, the process of farmers' ageing was observed in Poland. It has started already in the communistic period of economy. According to Agricultural Censuses 1996 and 2002, the share of

farmers in age group of 45-60 has increased by 5.2 percentage points (Table 2). The problem of the ageing of farmers is often connected with lower level of education of older farmers and lack of perspective of farms' development.

The drawback of the structure of farms by area and age appeared with new strength at the beginning of market economy, as on its conditions the small farm is not able to generate sufficient income to farm household² and to accumulate the financial means for development especially for introducing advanced technologies. What more, it is not profitable to apply highly productive technologies in small farms. In such conditions, the process of excluding small farms, especially in a way of bankruptcy or selling out could be expected but as the data in Table 1 shows, the scale of changes was far from expectations. It was generally due to some reasons. In conditions of high rate of unemployment in economy (in Poland the rate of unemployment was changing from 10 to 20% in the 1990s) the farms in Poland (as well as in the other countries of transition) played role of special social buffer (Baum et al., 2006). Moreover, the cost of owning a farm (farm land) has been very low. In Poland there is only one tax paid by the farm – the agricultural tax, the rate of which depends on area and quality of agricultural land. The tax is relatively low, and land of worse quality is exempted from it. Many of small farms are of a subsistence character. In conditions of low costs of maintaining the farm, the balance of costs and benefits of owning farm in different forms like: (in)direct income, desire of preservation farm for future (for retirement time or for next generations), self employment, pleasure from agricultural activity during leisure time and many others, is positive. The phenomenon of sustainability of subsistence and part-timing farming is observed not only in Poland but in other countries too (Bachev H., 2005). The complex character of reasons for the stability farm structure by area and age makes efforts of agricultural policy nearly fruitless. In the whole period of market economy the government tried to initiate and support changes of farm structure, mainly farm structure by area which is connected with changes of the structure by age because rather younger farmers are interested in the development of their farms and consequently in purchasing agricultural land.

The tools of improvement of farm structure by area and their results

The need of improvement of agricultural structure was noticed very early in conditions of market economy. The preferential credit was the main tool of agricultural policy during dozen first years of transition (Danilowska A., 2005) and it was used to change the agrarian structure too. The credit lines for the purchase of agricultural land and for younger farmers became the most important credit lines offered to farmers in the frame of credit support system that was brought into operation in 1994. The terms of the preferential credits for the purchase of agricultural land and for younger farmers were very favourable, especially in comparison with the terms of commercial credits. It was expressed generally by lower interest rate (1/4 of central bank discount rate), longer maturity (15 years), the grace period (2 years) and low farmer's contribution to financing of the investment (20%). It is worth to mention that farmers could take credits for the purchase of land not only in the frame of both mentioned credit lines but in the frame of credit line for basic investment; however on less convenient terms. The results of the credit line for the purchase of agricultural land are presented in Table 3.

The data in Table 3 shows that in the years 1995-2006 about 90,000 of farmers took preferential credits offered in the frame of credit line for the purchase of agricultural land and 632,571 hectares of land have changed the owners. The numbers would be higher if the credits for the purchase of land granted in the frame of other credit lines (for younger farmers and basic investment) were taken under consideration. However, the effects of the preferential credits are rather reflected in the growing share of farms exceeding 15 ha. The number of new established farms was not high.

² by assumption that the agricultural activity is a single source for household's income

Table 3

Effects of preferential credits for purchase of agricultural land				
Years	Number of credits	Area of purchased land (ha)	Average area of purchase land (ha)	The number of the new established farms
1995	8, 620	45, 839	5.32	68
1996	14, 246	76, 987	5.40	98
1997	12, 717	65, 474	5.15	57
1998	4, 902	27, 786	5.67	0
1999	6, 596	31, 125	4.72	0
2000	5, 642	37, 320	6.61	0
2001	5, 603	37, 932	6.77	0
2002	6, 718	48, 723	7.25	0
2003	6, 152	43, 282	7.04	186
2004	6, 077	53, 680	8.83	162
2005	6, 267	98, 563	15.73	104
2006	6, 377	65, 860	10.33	177
Total	89, 917	632, 571	7.04	852

Source: Own calculations based on the data from Annual Reports on Activity of the ARMA (1994-2006), ARMA 1995-2007.

In 2001 the first attempt in the area of early retirement in agriculture was made in the form of law on structural pensions in agriculture (implemented on January 1, 2002). The influence of this law on agrarian structure, land turnover, labour resources in agriculture, and improvement of demographic structure was rather small, among others due to the short period of its operation (Paszkowski S., 2004).

The characteristic of structural pension for farmers

Early retirement measure was introduced in the frame of Rural Development Plan for 2004-2006. It was aimed at farmers in the pre-retirement age, who decide to hand the agricultural holding over to another farmer or successor, and also to the Agricultural Property Agency. The main aims of programme of structural pension were:

- to improve farms' structure and farms' productivity;
- to accelerate the process of change of farms' holders generation;
- to direct the land for non-agricultural purposes when agricultural activity could not be carried in good economic conditions;
- to ensure the income for farmers who give up farming before the retirement age.

The farmer who wanted to get structural pension had to:

- be in the age between 55 - 65 for men and 60 for women;
- be involved in the system of agricultural social insurance, and had not be in debt due to the delayed payments for the social insurance fund;
- run his/her own agricultural holdings and he/she should have been at the country list of agricultural producers;
- stop the agricultural activity at all;
- transfer the farm of area exceeding 1 ha of arable land.

The farm could be taken over in whole by a successor who has met the following requirements:

- was under the age of 40;
- started running an agricultural holding for the first time;
- had the appropriate professional qualifications to carry out agricultural activity;
- submitted a business-plan for the holding and entered into obligation to run the farm for minimum 5 years.

Another possibility was to transfer a farm for purpose of enlargement the holding of another agricultural producer who was under 50 years old and had professional qualifications.

The amount of early retirement support was determined on the basis of the minimum state pension. The support was an adequate percentage of the state pension. The basic amount of aid was at 210% of the minimum state pension. The pension might be increased by 60% of the minimum pension on the account of a benefit for the spouse (under condition that the spouse was in proper age and did not have own source of income). In case of land transfer of area exceeding 3 ha, the pension increased by 50% of the minimum pension and further increase amounting at 3% was offered for each hectare beyond 3 ha to 23 ha of arable land. The same increase was given in the case of land transfer to farmer of age under 40. The support should be added up, with the reservation that the total amount of the aid did not exceed 440% of the minimum pension. As Paszkowski (2006) noticed, in regulation of structural pension the pressure was rather put on the regulation of height and system of payments than on a problem of agricultural land transfer system.

The presented terms seem to be very advantageous for farmers. Farmers responded very quickly to this measure. The programme was brought into operation on 1 August 2004 and to the end of that year 21,592 farmers had applied for the early pension (Table 4). In the following years the interest was continued and by the end of July 2006 the limits for that measure were fulfilled. It is necessary to notice that there were very significant regional differences in farmers' interest in early retirement. For example, in Lubuskie voivodship only 580 farmers applied for early retirement pensions; whereas in Mazowieckie voivodship nearly 10,000. The differences can be explained partly by different numbers of farms and their structure in each voivodship but the other reasons had also play their role.

Table 4

Number of applications and number of transferred farms and the average monthly payment

Year	Number of applications	Number of transferred farms
VIII –XII 2004	21, 592	7, 892
2005	17, 836	22, 822
2006	18, 505	21, 744
Total ¹	57, 933	52, 125

¹ the number is not a sum of number in columns because of different data given by ARMA on the numbers of applications and the numbers of transferred farms

Source: Annual Reports on Activity of the ARMA (1995-2003). ARMA 1995-2005

During the analysed period 58,185 farmers applied for the early retirement pension. As an effect of the measure of early retirement, taking into consideration the application accepted in 2007 too³, 53,578 farms were transferred to other owners and about 450,000 ha of agricultural land were handed over, of which approximately 46% of land was transferred to successors and 54% was handed over to enlarge other agricultural holdings. Comparing the number of transferred farms with the number of farms whose owners were in eligible age 55-65(60)⁴ it can be estimated that about 20% of the eligible farms⁵ took part in the measure. In some voivodships, for example in Kujawsko-Pomorskie voivodship, these figures are much more positive (Biczkowski M., Kluba M., 2006). It is necessary to underline that merely the transfer of land for enlargement of other farm improves the structure of farms by area. The transfer of a farm to successor who starts agricultural activity does not improve the agrarian structure, however doubtlessly accelerates the change of generations in agriculture.

The level of early retirement payment was favourable for farmers who decided to hand over their farms (Table 5). The average monthly gross early retirement pension was nearly twice higher than the average farmers' retirement pension and higher than the average non farmers' retirement pension. But the fact, that in many cases⁶ it is paid for two persons changes the calculation. So the question arises what is the reason of the attractiveness of this measure for the farmers, especially for couples.

³ Because of administrative reasons

⁴ according the Census 2002

⁵ eligible by the age of the owners but in is unknown if by other terms

⁶ In Warminsko-Mazurskie voivodship, 33.3% interviewed farmers take pension for couple (Babuchowska K., Lizinska W., 2006).

Table 5

Average monthly gross early retirement payment

Year	in PLN	as % of average farmers' retirement payment	as % of average non farmers' retirement payment	as % of average gross wages and salaries
VIII–XII 2004	1,452	185	113	63.9
2005	1,491	188	114	63.2
2006	1,659	197	122	67.0
Total	1,565			

Source: own calculation based on the data: GUS, Statistical Yearbook of Agriculture and Rural Areas 2000 and 2005 and ARMA

The answer is not simple. Investigations of behaviours of farmers who had handed over their farms could help to answer. The researches indicate that many farmers have not finished their agricultural activity. In the case of Warminsko-Mazurskie voivodship 76.2% of investigated farmers continue agricultural activity. As can be supposed, they run the farms as they did before the formal transfer of the farm. Of course, in survey they declared that they only help successors (Babuchowska K, Lizińska W., 2006). Such behaviours are possible because nobody check the situation after the formal transfer of the farm. The other reason is the possibility to carry out other than non-agricultural activity that gives former farmer supplementary to pension income.

The results of the measure are generally presented as a success story. One of the reasons for the lack critical view is a way of financing the measure. Only 20% of financial resources were from the state budget and 80% from the EU. The scheme will be continued in the frame of Rural Development Programme for 2007-2013. In renewed measure some changes in the terms of land transfer and the way of establishing of pension height were introduced.

Conclusions

The first results of implementing the early retirement scheme in 2004-2006 show that farmers were interested in it. It seems that the formal results of the programme such as the number of retired farms and the area of transferred land in the period 2004-2006 were positive, but the question about the real effects of that measure arises. The main problem is the scale of agricultural activity of retired farmers. It seems that many of them run farms as earlier which mean that the aims of the measure are not fulfilled and public money is wasted. Moreover, a negative aspect of this situation, that is not often indicated, is a tolerance for breaking the law.

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Main Development Problems of Latvian Small Enterprises

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Abstract

The study targets at development possibilities for small enterprises in Latvian rural areas where specific obstacles and development problems are faced.

In order to identify the factors and problems impacting the development of Latvian small enterprises, 200 small enterprises, the determining criterion for which was a number of employees, were surveyed during the study.

Enterprises were randomly selected, but representing all the four Latvian planning regions: the regions of Kurzeme, Zemgale, Vidzeme and Latgale.

The main factors promoting and hindering the development of Latvian small enterprises were identified in the study.

According to the managers/representatives of enterprises, the experience and education of entrepreneurs, the management of enterprises and work organisation etc. are the determining endogenous factors promoting the development of enterprises. However, the European Union funds and government support are the main exogenous factors promoting the development of enterprises.

According to the managers/representatives of enterprises, the consumers' purchasing power, government policy, inflation and lack of labour force are the main factors hindering the development of small enterprises in Latvia.

Within the scope of the study, the opinion of entrepreneurs was ascertained about the future development possibilities for their enterprises. 56% of entrepreneurs believe that their business will expand and develop by attracting the European Union funds. However, 53% of them think that small enterprises will be pushed out of the business environment as the competition among enterprises becomes tougher.

Key words: impacting factors, perspectives for small enterprises

Introduction

So far there are few studies related to factors that promote or hinder the development of small enterprises, their problems and perspectives, especially in relation to small enterprises in Latvian rural areas. Until now the researchers have made studies on bread producing enterprises and enterprises offering tourism services, which was a basis for the further study.

Small enterprises are the most significant elements in a market economy, and the most dynamic and flexible form of entrepreneurship. In developed countries, small and medium size enterprises compose a basis for the market economy and provide economic growth and regional development, operate in industries like manufacturing, services, tourism and commerce.

The **hypothesis of the study**: successful performance and development of Latvian small rural enterprises depend on various factors.

The **aim of the study** is to investigate the development possibilities, problems and perspectives for small enterprises in Latvian rural areas.

The following **tasks** were accomplished within the framework of the study:

- 1) identification of the factors impacting (promoting, hindering) the development of small enterprises;
- 2) ascertainment of the opinion of small enterprise managers/representatives on the development possibilities, problems and perspectives for small enterprises in Latvian rural areas.

Research methods:

Monographic and descriptive, inductive and deductive methods. The sociological research method of surveying was used to collect information. The data were analysed by using SPSS 11.0 (Statistical Package for the Social Science) Production Facility application.

Results and discussion

1. Factors impacting the development of Latvian small enterprises

In accordance with the nature of impact, all the factors were divided into two groups: the first group includes the factors promoting development, the second group – those hindering development, i.e., development problems.

The factors promoting enterprise development are those ensuring the development of an enterprise and its successful performance under competition. The factors promoting enterprise development can be divided into two groups: endogenous and exogenous.

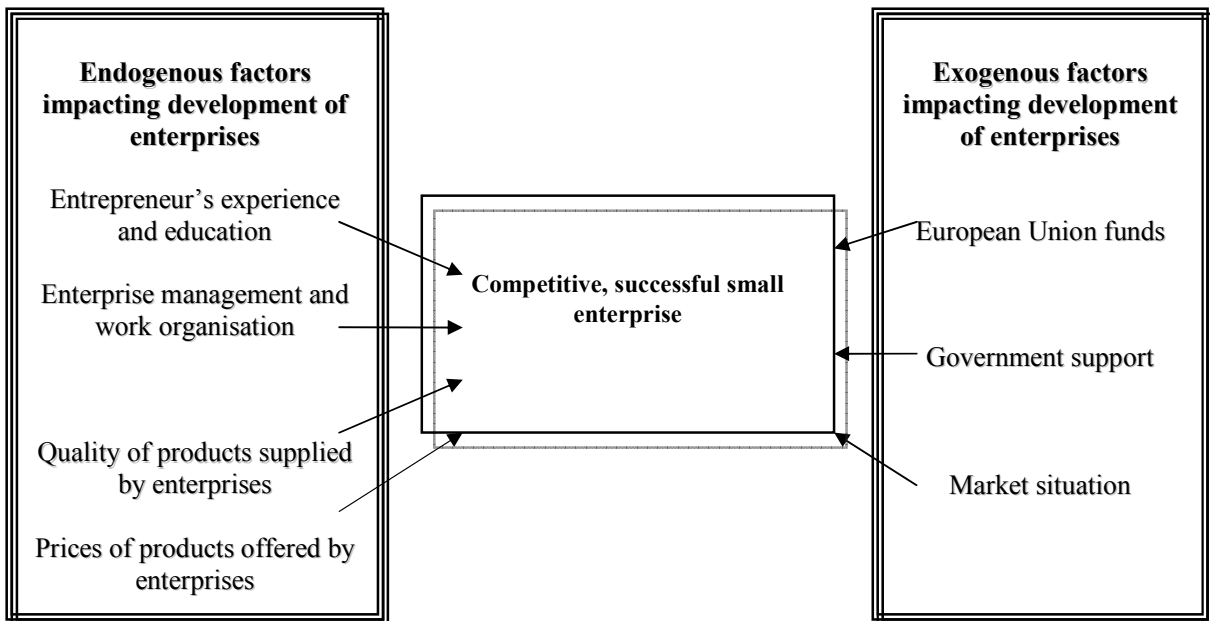
The factors hindering enterprise development or development problems are those delaying the development of an enterprise and reducing its competitiveness (Zvaigzne A., 2005).

In order to identify the factors and problems that impact the development of Latvian small enterprises, 200 small enterprises were surveyed during the study, where the determining criterion was a number of employees.

The enterprises were randomly selected, but representing all the four Latvian planning regions: the regions of Kurzeme, Zemgale, Vidzeme and Latgale.

Most enterprises were surveyed in Latgale region, where 78 enterprises provided information, accounting for 40% of all respondents. The rest of enterprises are located in other regions: 29% in Vidzeme, 17% in Kurzeme and 14% in Zemgale.

The breakdown of respondents by type of entrepreneurship was as follows: 49% farms, 42% limited liability companies and the rest 9% were various enterprises like, for instance, joint stock companies, sole proprietors and others.



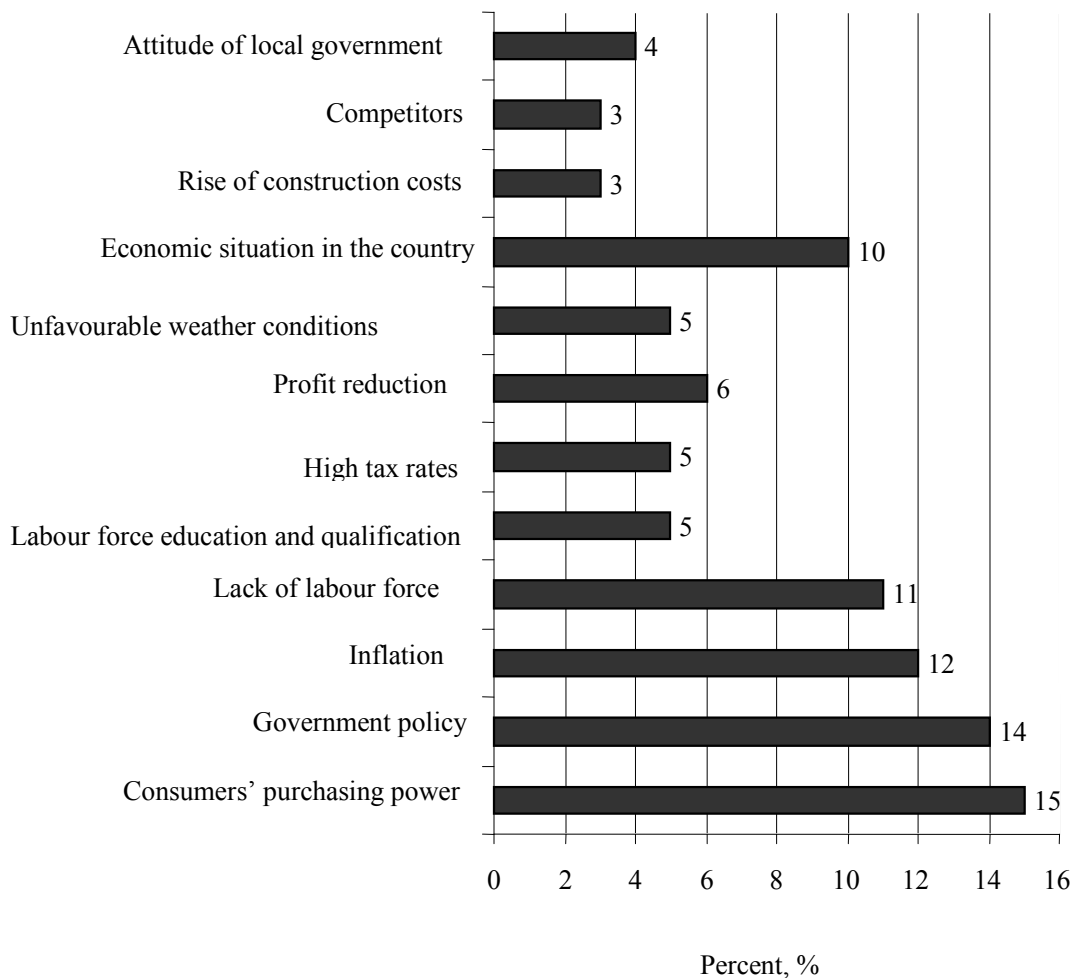
Source: figure developed by the authors according to the study data

Figure 1. Main factors promoting the development of Latvian small enterprises

Agricultural goods are produced by 101 enterprises engaged in the survey, accounting for 51% of all surveyed enterprises. Among these enterprises, 8% gain additional income by offering tourism, transport and logging services as well as other kinds of economic activity. 18% of surveyed enterprises provide tourism

services, including catering and lodging services. Most guest houses, located in rural areas, employ less than 9 employees, which explain the large number of micro enterprises. As the enterprises were randomly selected for the survey, some enterprises turned out to be engaged in the processing industry. They are bread producing enterprises, as well as ones producing cobble-stones, drinks, and underwear for women, metallic constructions and agricultural product processors – 16 enterprises in total, accounting for 8% of all the enterprises. The rest of enterprises are engaged in various industries – construction, retail sales, real estate, professional services and other industries.

Being based on the experience of previous researchers, the survey included a question about additional businesses of enterprises, since small enterprises, engaged in production of agricultural goods, make no profit. Additional businesses help the enterprises stay in business. According to the survey results, 49 enterprises already offer additional services. 19 enterprises are engaged in retail and wholesale trade, 5 enterprises offer entertainment, 4 enterprises – transport services, including digging, while the rest of them offer professional services. For nine enterprises, agricultural activity has become an additional business, showing that only a small part of enterprises has found a niche for sales.



Source: figure developed by the authors according to the compiled data

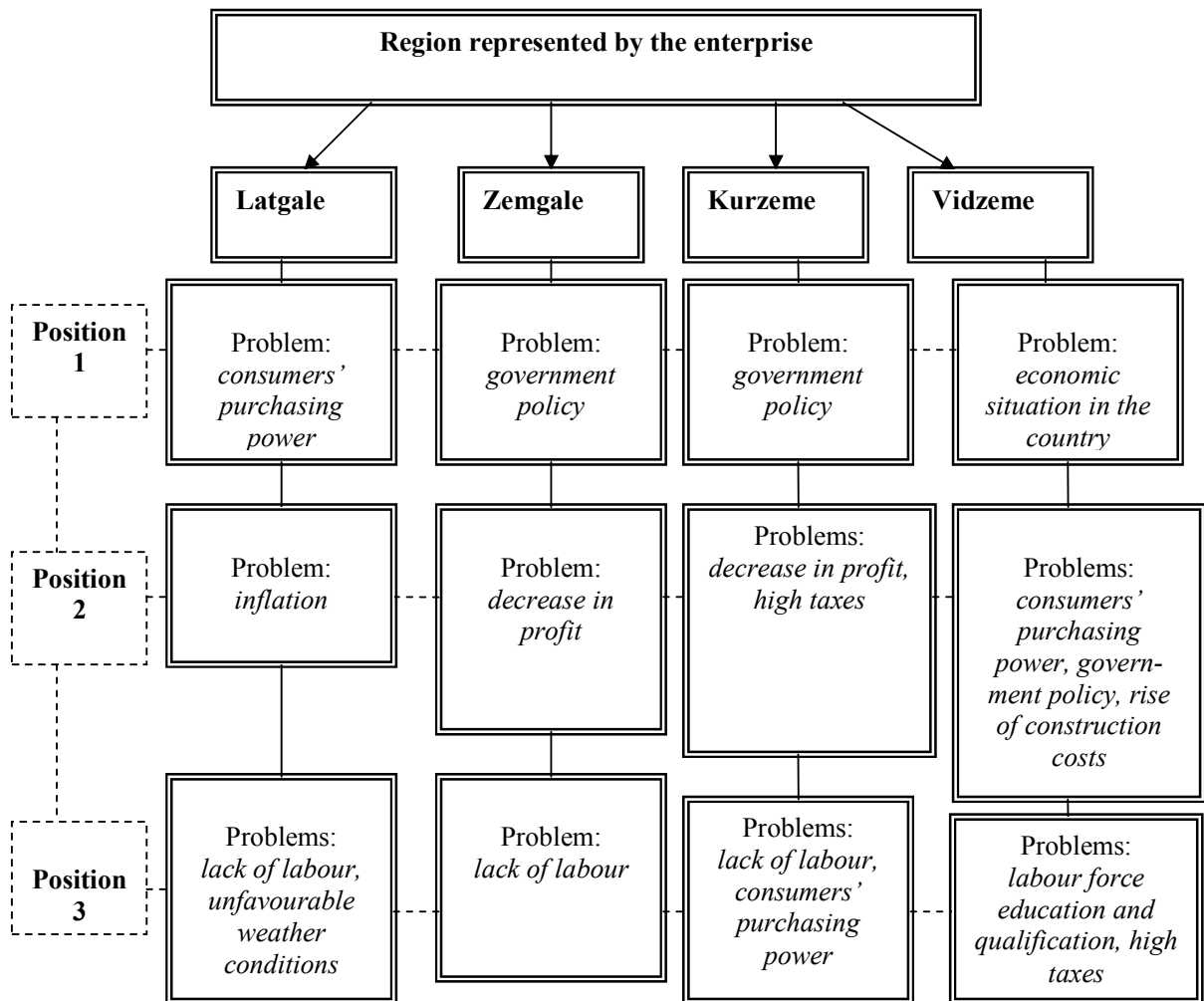
Figure 2. Main factors hindering the development of Latvian small enterprises, in per cent

After analysing all the factors promoting business development, it was determined that this development was mostly fostered by funding from the EU Structural Funds – 92 respondents mentioned it. But 85 representatives of enterprises believe that their businesses are fostered by the government support – they are the recipients of government subsidies. As the selection comprised 86 farms, one can assume that 99% of farms receive subsidies. One has to conclude that the Regional Development Programme has not functioned as a factor promoting business development, since no one has mentioned funding of the Regional

Fund. After approbating the endogenous factors of business development, it was found that 140 (70%) representatives of enterprises believe that the experience and education for entrepreneurs are significant. 80 (40%) representatives of enterprises are convinced that product quality fosters business development. But 75 (38%) representatives of enterprises believe that much depends on enterprise management and work organisation, while 74 (37%) respondents are sure that product prices are a factor fostering enterprise development.

The main factors fostering small enterprise development are shown in Figure 1.

According to the enterprise managers/representatives, the main problems and factors hindering the development of small enterprises in Latvia are as follows: 15% of enterprise managers/representatives believe it is the consumer purchasing power, 14% - government policy, 12% - inflation and 9% - lack of labour (Figure 2).



Source: figure developed by the authors according to the compiled data

Figure 3. Arrangement of problems in positions by the number of respondents from the regions represented by enterprises

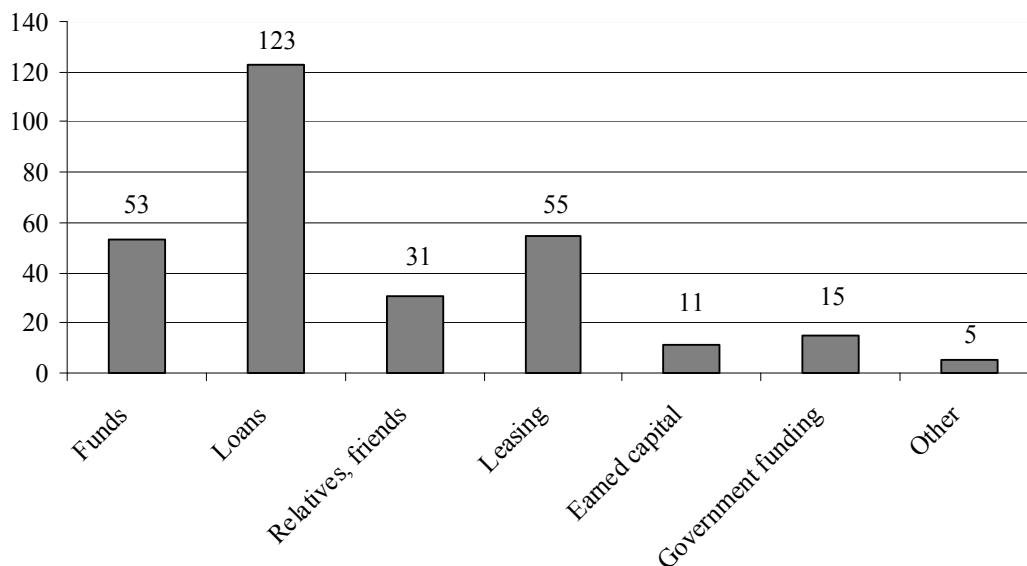
One can see differences in opinions when analysing the responses of surveyed enterprise managers/representatives regarding the main problems and factors that hinder enterprise development. The opinions depend on the region where an enterprise is located (Figure 3).

The low purchasing power of customers is the main problem for enterprises located in the region of Latgale, in other regions it is the government policy or the economic situation in the country that hinders development.

2. Development possibilities for small enterprises in rural areas

As most of the managers of small enterprises are also their owners, they were asked to reveal the reason for starting up a business. The respondents regard their own initiative as the main reason – 150 (75%) representatives of enterprises have emphasised it. Only 42 enterprises have based their businesses on ideas, accounting for only 21% of the surveyed enterprises. 16 (8%) enterprises have continued the business started by their parents, which is a relatively low rate relative to other countries. It has both political and social reasons. Only every seventh respondent has foreseen opportunities for high profit, which is one of the stimuli for starting a business. However, in order to start a business, an initial capital is required; it was asked in the questionnaire, too. According to the survey results, 147 (74%) enterprises were established by using their own savings.

55 (28%) enterprises have taken bank loans for starting a business. 30 (15%) have borrowed money from their friends and relatives. Only 12 (6%) owners of enterprises have inherited a property which was used for financing their business start-up. Funds are necessary not only after an enterprise has started functioning, but during the whole period of activity of an enterprise. Therefore, other questions have been raised: how long the enterprise functions, what additional funds are attracted for fostering business, how the business is protected from emergencies. Most of the surveyed enterprises have been functioning for 11-16 years; they were established right after Latvia regained its independence. It implies that 42% of the surveyed enterprises have got through periods of business crises and managed to stay in business for a long period. 20% of the surveyed enterprises have reached a stage of maturity, i.e., they have been functioning for 6-10 years.



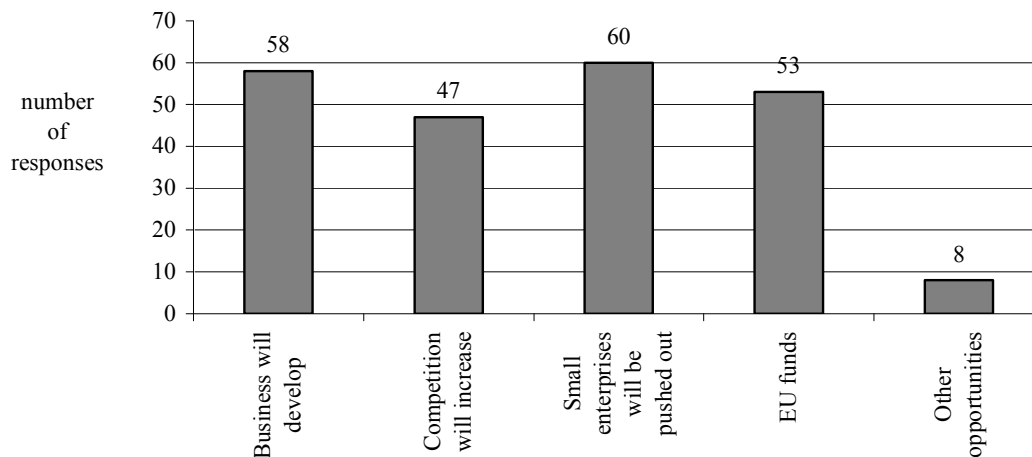
Source: figure developed by the authors according to the compiled data

Figure 4. Funding attracted for developing enterprises by type, number of responses

There were 52 enterprises which had just started their businesses and were not older than 5 years, accounting for 30% of the surveyed enterprises. It is remarkable that the number of employees has increased in 32% of enterprises regardless of unfavourable indications in the economic situation in Latvia. The number of employees has decreased only in 12% of enterprises; no changes were reported in the majority of enterprises (56%) over the last three years.

According to the survey, 123 enterprises have borrowed additional funds from a bank (Figure 4).

It has to be stressed that 53 enterprises have used funding from various Funds for developing their businesses. There are 14 enterprises which have used only leasing services and 11 enterprises which have invested only their own savings and earned capital. It implies that still there are conservative entrepreneurs wishing to borrow no loans. 31 enterprises have borrowed funding from their friends and relatives to enhance their financial situation. It is a good indicator for establishing enterprises at the initial phase (proving the existence of social capital). However financial problems of enterprises propose not to be a positive sign during the company functioning. It was found out during the survey that 98% of enterprises had bank accounts and used bank services, but 66% of the surveyed enterprises had taken loans from banks, which was 132 enterprises out of their total number. The best cooperation in the field of bank loans they had experienced with 3 commercial banks: Latvijas Hipotēku un zemes banka, SEB Latvijas Unibanka and Hansabanka. 59 enterprises had taken loans from Latvijas Hipotēku un zemes banka, and 50 enterprises had attracted loans from SEB Latvijas Unibanka for their development. However, loans from Hansabanka were taken only by 31 enterprises. A small part of enterprises had used crediting services of the following banks: Latvijas Krājbanka, Aizkraukles banka, Parex banka, DnB NORD Bank, Baltic Trust Bank, and Nordea Bank. It is a positive fact that 41 enterprises had taken loans for financing projects envisaging building of new production units, expansion of the existing ones, and the purchase of equipment and buildings. 27 enterprises had started their businesses with the help of a bank, which is a very positive indicator for economic conditions in Latvia. If we assess the business safety of enterprises, it is very stable as 86% of enterprises use insurance services. In most cases, transport vehicles are insured. Vehicles are insured in 137 (70%) enterprises. Real estate is insured in 108 (54%) enterprises. In case of a fire, the enterprises will receive insurance. A surprising fact is that 50 (25%) managers of enterprises use life insurance that protects the families of their employees. Movable property is insured in 43 (20%) enterprises. In some enterprises, the health of employees is insured, which is a state-level problem as no health check-ups are carried out. This leads to many deaths and serious diseases that could be prevented in case diseases are detected on time. In some cases, agricultural crops are insured, but the insurance companies are reluctant to insure crops, and farmers also have negative attitude towards it.



Source: figure developed by the authors according to the compiled data

Figure 5. Entrepreneurs' opinion on the development possibilities for enterprises

Within the scope of the study, entrepreneurs' opinions on the development possibilities for their enterprises were ascertained (Figure 5). The entrepreneurs had two basic opinions. 58 (29%) entrepreneurs believe their business will expand and develop by attracting the European Union funding. Other entrepreneurs, 60 (30%) in number, are sure that small enterprises will be pushed out of the business environment as the competition among enterprises becomes tougher.

Some entrepreneurs have revealed their visions about the ways enterprises could stay in business while the competition becomes stronger. Some entrepreneurs believe that new original brands have to be

developed, production has to reorient towards other products, and high quality has to be retained for products. Products have to be sold both in the European Union and Russian markets. Some entrepreneurs even do not plan their business development or plan only a very limited development. Some entrepreneurs believe the government policy has to be changed and a qualified labour force is necessary in order to change the situation.

Conclusions

1. According to the managers/representatives of enterprises, the experience and education of entrepreneurs, the management of enterprises and work organisation are the determining endogenous factors promoting the development of enterprises.
2. The main exogenous factors promoting the development of enterprises are the European Union funds and government support.
3. According to the enterprise managers/representatives, the basic factors hindering the development of small enterprises in Latvia are as follows: consumer purchasing power, government policy, inflation and lack of labour.
4. Taking into account the regional representation of enterprises, the low purchasing power of customers, high inflation and unfavourable weather conditions, having a direct impact on enterprise performance, are the main problems for enterprises located in the region of Latgale. In other regions, the government policy and the economic situation in the country, which is an exogenous factor, are the factors that hinder development, followed by the endogenous factors like a decrease in profit, high taxes, insufficient education and qualification of labour.
5. According to the survey, most of enterprises have borrowed additional funds from a bank. However, one fourth of the enterprises has used funding from various Funds for developing their businesses.
6. Within the scope of the study, entrepreneurs' opinions on the development possibilities for their enterprises were ascertained. Approximately half of the entrepreneurs believe their business will expand and develop by attracting the European Union funding. But almost as many entrepreneurs are sure that small enterprises will be pushed out of the business environment as the competition among enterprises becomes tougher.

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Information and Communication Technologies in the Rural Areas: Situation, Changes, Development

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Abstract

The main focus of this paper is laid on the current situation and development of the information and communication technologies in the rural area of Latvia and in the world. The different information and communication technologies are used in the rural areas from abacus to modern computers. Mechanical and electro-mechanical machines have been widely used. The punched card tabulating machines were used in the 1950s. Three generations of the digital computers in different time periods have been employed in the rural areas. The new technologies with minicomputers and personal computers were widely used. The arriving of the networks and internet came alongside with new technologies. New information and communications technologies have become an integral part of people's everyday life. New technologies continue to develop.

Key words: information, technologies, computer, software, internet

Introduction

New information and communications technologies (ICT) have become an integral part of people's everyday life. ICT are developing in all the branches.

It is important to look back to the historical evolution of the ICT at the rural areas of Latvia, and its link with the turning points in the world. What do we mean by "ICT"? ICT is a set of knowledge, methods, techniques, equipments that provide the obtaining, storage and dissemination of any kind of information. ICT now encompasses a wide and growing field of activities, competencies and products.

As the time passed the rural socio-economic environment, the technologies of production, the administrative division and the number of inhabitants have changed. The same refers to the computing sphere, where different information technologies have replaced each other: counting frames, mechanical and electromechanical calculators, punched card tabulating machines, digital computers.

The aim of this research is to display the situation, and development of the ICT in the rural areas of Latvia. The tasks display different technologies in the context of historical sequence with the development of ICT in the world.

Methods of the study: scientific abstractions, monographic, analysis, and expert.

Results

The first computing devices

One of the first computing devices was the abacus (the same term is "calculating frame"). Its history has been traced as far back at the ancient Greek and Roman civilizations. The machine is quite simple, consisting of beads strung on rods that are in turn mounted in a rectangular frame. As the beads are moved back and forth on the rods, their positions represent stored values. It is in the positions of the beads that this "computer" represents and stores data. For control of an algorithm's execution, the machine relies on the human operator. Thus the abacus alone is merely a data storage system; it must be combined with a human to create a complete computing machine.

Calculating frames widely have been used in the calculating operations of the different spheres.

The use of mechanical machines started in the 17th century. The design of computing machines was based on the technology of gears. These machines represented data through gear positioning, with data being input mechanically to establish gear positions. The output from machines was achieved by observing the final gear positions. Calculating machines such as "Felikss" widely have been used in Latvia.

Technology of punched cards

In 1830, Charles Babbage, a gifted English mathematician, proposed to build a general-purpose problem-solving machine that he called "Analytical Engine". He never finished this work, but many of his ideas were the basis for building today's computers (Randell, 1975).

Babbage's machine was designed so that the sequence of steps the machine was to perform could be communicated to the machine in the form of holes in paper cards. Thus, Babbage's machine was programmable. His assistant Ada Lovelace is often identified today as the world's first programmer. But the idea of communicating an algorithm with holes in paper was not originated by Babbage. In 1801, Jacquard had applied a similar technique to control weaving looms in France.

Later, Herman Hollerith applied the idea of representing information as holes in the paper cards to speed up the tabulation process in the 1890 US census (Ceruzzi, 2003). The technology of punch cards began. Until the middle of the twentieth century machines designed to manipulate punched card data were widely used for business data processing.

The 1960s were the beginnings of the significant computing in Latvia. In 1960 an experimental Statistical Computing Station was established in Jelgava. The punch card tabulating machines were situated in that computing station. They could sort, merge and summarize data on the punch cards. The network of the computing stations and centres spread all over the country.

In the 1940s IT was nothing more than a laboratory matter confined to the world of calculations, and far-removed from the notions of civil usage. A dozen machines which could loosely be termed computers were built during World War II (in Germany, England, the USA) mainly to decipher secret codes or to make calculations relating to ballistic.

Mainframes and minicomputers

In 1946 at the University of Pennsylvania flexible machine ENIAC (Electronic Numerical Integrator and Calculator) was developed. Showing great enthusiasm for the ENIAC project, Von Neumann immediately began work on the machine's internally-stored fixed programme. The basic idea was to store the programme data and instructions in a single manner. Von Neumann designed the architecture of the new machine, the EDVAC (Electronic Discrete Variable Automatic Computer). While work continued on building the ENIAC, he identified five basic functions which continue to define the very backbone of computer architecture: the central control unit, the arithmetical calculation unit, memory, and input and output systems. The team also chose to use binary rather than decimal numbers. On 30 June 1945, von Neumann published "A first Draft of a Report on the EDVAC", which is without doubt the birth certificate of IT (Ceruzzi, 2003). Thus the intending of the first generation electronic computers with vacuum tubes technology began.

The first generation computer BESM-2, was installed in the University of Latvia, in 1951, later, in 1959, computer BESM-4 was installed in the Computing Centre of the University of Latvia (Strazdiņš, 1972).

In the 1960s, computers were programmed using low-level proprietary language, which was close to the machine language. With the appearance of machine-independent programming languages such as FORTRAN (1956) and COBOL (1957), which were then compiled or translated into the machine language, the computer software development industry came into being. It was not until 1969 that IBM decided to sell machines and software separately.

The transistor, a smaller and more reliable successor to the vacuum tube, was invented in 1947. The so-called second generation computers, in 1960s, which used large numbers of transistors, were able to reduce computational time from milliseconds to microseconds. The second-generation computers were smaller, faster and more reliable than the first-generation computers.

The second-generation computer BESM-6 was installed in the University of Latvia, but Minsk-22 and later Minsk-32 in Jelgava, the Information Computing Centre of the Ministry of Agriculture, established in 1968 (Strazdiņš, 1972).

In the early 1960s, great enthusiasm ensued relating to the use of electronic data processing (EDP) in agriculture. The main areas identified as appropriate for EDP were financial and production record systems, and the use of optimisation techniques, particularly linear programming. The use of optimization techniques was constrained by the amount of time needed to collect the necessary data and transform them into the form

required by the standard algorithm available on mainframe computers while generating the results and explaining them to the decision maker.

In Latvia the use of mathematic methods particularly linear programming in the agricultural planning activity was researched and worked out by the Economic Institute of Latvia Scientific Academy. The group of researchers headed by scientist B.Treijs worked out a long-term planning of production based on the collective farms at Tukums district.

In 1967 the Department of the Computer Technique and Mathematic Methods at Latvia Academy of Agriculture was established. This Department developed the application of mathematic methods in agriculture. During that time the author of the article worked out a diploma paper on the use of mathematic methods for the planning of forage. The model was solved by means of a mainframe computer BESM-4 in the University of Latvia.

In 1964, IBM launched the SYSTEM/360 range, which was the first to feature integrated software and hardware. It was the first such third generation machine to use integrated circuits (Corniou, 2006). The third generation machine Nairi-3 was installed in Latvia Academy of Agriculture.

In the 1970s several software packages of planning and accounting were used for collective farms. The most important tasks were the optimisation of agricultural production, optimization of cattle feeding, farm accounting, cattle breeding package "Selex", package "Soil-harvest" (Gailums, 2004). IT was based on the mainframe computers. The source documents were collected over a period of time. Then their data were entered into the computer in batches. Data collection in early computers was often done by transcribing hardcopy data into computer useable forms such as punched cards or paper tape. The data were recorded by punching series of holes according to a standardized coding scheme. Technological advancements in data collection have made this cumbersome collection method almost obsolete.

New type of machine called the "minicomputer" appeared. Its growth was a cultural, economic and technological phenomenon. Large groups of people – at first engineers and scientists, later others introduced it – to direct interaction with computing machines. Minicomputers introduced the notion of the computer as a personal interactive device. Minicomputers PDP-5 and PDP-8 were popular in the USA (Ceruzzi, 2003).

The "digital era" began in the 1970s. In early 1974, two converged forces were at work. From one direction were the semiconductor engineers with their ever-more-powerful microprocessors and ever-more capacious memory chips; while the users of time-sharing systems were from the other direction.

The introduction of pocket calculators and pocket programmable calculators had several profound effects on the direction of computing technology.

Personal computers

A revolution started with the invention of the micro-processor in 1971 (Intel 4004). The micro-computing venture really came into being with the 1975 launch of the first micro-computer, Altair 8800. The primitive machine had 256-byte memory, and it was built around an Intel 8080. Steve Wozniak and Steve Jobs were inspired by the small size of the Altair to produce the first Apple I in 1976 and later, in 1977 the legendary Apple II. Then, in 1981, IBM PC came (Ceruzzi, 2003).

The 1980s were related to the use of personal computers (PC). The mainframe computers were replaced with PC. One of the best improvements of new technologies was that computers continued to become easier to use. On-line approach uses technology when data is input immediately and usually processed immediately. The Personal Work Stations were created in the collective farms.

For example, in the mid-1980s three software packages: resources of the electrical energy accounting, cattle breeding accounting, and storehouse accounting were performed by a personal computer Robotron-1720 in the collective farm "Taurene" of Cēsis district. This computing mini-centre was connecting with the Centre of collective farm by using agro-complex of the republic (Gailums, 2004).

New stage of the development of information technologies – the 1990s years are characterised by the peasant farms, which were founded in Latvia as a result of the Land reform. The farmers purchased PCs for different computing works such as book-keeping and planning of agricultural production. The farm became a computer-based information system. PC was a powerful tool for data processing and problem-solving. The farmer as a modern computer user was becoming more and more directly involved in the production of information through the PC.

In January 1991 Latvian Agricultural Advisory and Training Centre (LAAC) as the Latvian Agricultural Consulting Service was established by the Ministry of Agriculture. Its purpose was to provide

training and consultation for the farmers and rural enterprises. The legal status of the LAAC changed in July 1997, when it became a non-profit limited company. Latvian Farmers' Federation was a co-founder of Latvian Agricultural Advisory and Training Centre (Gailums, 2006). From the beginning the LAAC has a two-tiered structure: the centre and the regions. The farmers began to use services of the regional office.

Table 1

Number of transistors on a chip

Processor	Year of introduction	Transistors
4004	1971	2 250
8008	1972	2 500
8080	1974	5 000
8086	1978	29 000
286	1982	120 000
386	1985	275 000
486	1989	1 180 000
Pentium	1993	3 100 000
Pentium II	1997	7 500 000
Pentium III	1999	24 000 000
Pentium 4	2000	42 000 000
Intel Itanium	2003	200 000 000
Dual-Core Itanium 2	2007	2 000 000 000

Source: <http://www.intel.com/research/silicon/mooreslaw.htm>, January, 2008.

The computerisation of society can be measured by the simultaneous increase in the power of micro-processors, the development of networks and the growth of digital data storage capacity. We have entered an age of plenty development of basic technologies with many performance levels. Since the 1970s, these technological engines have been powering progress in the IT industry, which, in turn, has drawn on its new achievements to fuel continued growth.

The IT world has always been fond of powerful symbols, and it has personalised developments by defining "laws". The most famous is undoubtedly Moore's Law (Slater, 1987). In an article published by *Electronics Magazine* on 19 April 1965, Gordon Moore, Intel (in 1968) co-founder saw the future. His prediction is now popularly known as Moore's Law, states that the number of transistors on a chip doubles every 18 months (Table 1).

Internet

As with many IT innovations, the origins of the internet can be traced back to the work carried out by the US army to face up to the threats of the Cold War, and to the fundamental research being carried out by academics. It is the fruit, not of one single source of inspiration, but the convergent result of research made by a relatively small number of experts, all of whom were used to high levels of exchange.

Electronic mail officially came into being with the first message sent by Ray Tomlinson (to himself) between two remote computers, the two being connected to ARPANET. This invention paved the way for one of the most significant ICT developments of the information society.

ARPA split the world into six domains: education (.edu), government (.gov), military (.mil), organization (.org), commercial (.com) and network resources (.net).

1993 is the official birth of the web. After less than five years, 50 million people were using the internet. It had taken the radio 40 years to hit the same figure (Ceruzzi, 2003).

The different Internet technologies widely are used in the rural areas of Latvia. The number of users increases every year.

Enormous progress has been made over the past 30 years. Exchanges with machines have been rendered far more comfortable with the arrival of the mouse, graphic interfaces, drop-down menus and dialog boxes, etc.

The simplification of user interface remains at the heart of research. The user feels both comfortable and confident. The factors such as noise levels, cluttered design, aesthetics, keyboard ergonomics, reliability and reaction speed all contribute to the intrinsic qualities of a given interface being strengthened or weakened. Complex problems continue to be raised by the design of a “good” interface. Designers are faced with a wide spectrum of possibilities within which they must make their choices.

We are surrounded by these creatures – the personal computers, laptops, handheld assistants, printers, internet-savvy phones, music storage drives, and other digital wonders.

In 2003 the Information Society office at the State Office was created. Its function is to supervise the management of the project “e-administration“, and to coordinate the development of the Information Society. In the rural areas local governments yet do not have understanding and information about electronic communication. One of the obstacles for successful boom of the Information Society is poor knowledge on the Information Society and information technologies. In the previous years big attention was promoted directly to the purchases of the IT, therefore now the main task for the Information Society office is to educate the inhabitants in using modern technologies.

Thanks to the science of ergonomics (also called human engineering) that designs things to be more easily used by people, the convenience of the computer use has also improved over the years. The next steps in the ICT are: to get wireless technologies into our everyday lives, precision farming, cell phones, more convenient software, and more suitable Internet services.

Conclusions

The different information technologies have replaced each other: counting frames, mechanical and electromechanical calculators, punched card tabulating machines, electronic machines in the rural areas of Latvia. In the early 1960s, great enthusiasm ensued relating to the use of electronic data processing in agriculture. In the next stage – in the 1970s several software packages of planning and accounting were used in collective farms. IT was based on the mainframe computers. The 1980s were related to using personal computers. The mainframe computers were replaced by PC. More and more Internet technologies develop in the rural areas.

ICT is a powerful tool that must be harnessed without any kind of apprehension or prejudice, for the service of the essential resources that are information, communication and knowledge.

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Economic Situation of Large-area Agricultural Businesses in Poland Between 1995 and 2005

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Abstract

The focus in this study is paid to the economic situation of large-area agricultural businesses, which emerged as a result of the different ways in which agricultural property owned by Polish State Treasury was developed. There were different legal and organizational entities brought into being. The aim of this study is to demonstrate the changes of the economic situation in such entities as large-area agricultural businesses. The information used for this analysis comes from enterprises which participated in the ranking named “The 300 List” published in the magazine “Nowe Życie Gospodarcze”. There were different economic indicators used in order to analyse their situation. The paper argues that however the companies are ranked among the best enterprises on The List 300, their economic results are different. The differentiating factor becomes in this case the legal form of their organization. The analysis shows that the private companies obtain the best economic results.

Key words: large-area farm, privatization, economic analysis

Introduction

The Polish agricultural sector has been touched by many changes in the last decade of the 20th and the beginning of the 21st century. These changes took place mainly due to the introduction of a market economy in 1989, as well as the restructuring and privatisation of state-owned agricultural businesses. Another important factor driving changes in Polish agricultural sector was the accession to the European Union (EU), which required the compliance with the Common Agricultural Policy (CAP).

The focus in this study is paid to the economic situation of large-area agricultural businesses which emerged as a result of the different ways in which agricultural property owned by State Treasury was developed. There were different legal and organizational entities brought into being. The basic units operating in this area are the following:

- **private farms**, whose owners changed and thus the property was privatised;
- **leased farms**: this is the most popular form of how land owned by the State Treasury was developed. They are run by different businesses: the lessees can be natural entities, cooperatives, commercial companies or other business entities;
- **commercial farms solely owned by the State** represented by the Agricultural Property Agency (APA), further on called one-man APA companies, i.e., the companies established to carry on researches on biological progress, and provide a constant supply of qualified breeds of live stock and varieties of cultivated plants;
- **administered farms**, i.e., enterprises owned by the State and run through managerial contracts concluded with the former State Treasury Agricultural Property Agency. This business form has been abandoned in recent years.

Data and Methods

The aim of this study is to demonstrate how the economic situation of large-area agriculture businesses has changed, as it evolved into the aforementioned organizational units. The information used for this analysis comes from enterprises which participated in the ranking named “The 300 List” published in the magazine “Nowe Życie Gospodarcze”. The ranking was prepared by the State Research Institute of the Agriculture and Food Economy (IERGZ). The analysis covers the period between 1995 and 2005. During this period the IERGZ annually sent out over 2000 surveys. However, every year the share of surveys returned, which were later used in the ranking, did not exceed 20 per cent of the total number of surveys sent out. Since 2001, the ranking includes production cooperatives. Detailed information on the top businesses

over the years is provided in Table 1. Every year of the survey period, the group of top enterprises being evolved from the state-owned property, included mainly enterprises leased by other businesses, which equalled to 40 per cent of all enterprises. There were no many private enterprises, i.e., acquired or partially purchased from the State Treasury over the initial three years. They made up around 10 per cent, yet their number increased significantly over the next years and varied from 58 in 1998 to 94 in 2005. Until the end of 1997, only 581.300 hectares were purchased (of the total of over 4.5 million hectares of the state-owned land managed by APA [APA Report, 1998]). The privatisation process continued and in 2004 the total of nearly 1.5 million hectares of the state-owned land had been sold [APA Report, 2005].

Table 1

Large-area agricultural businesses surveyed between 1995 and 2005, by organizational forms of business

Forms of organization	Number of large-area agricultural businesses per years analysed										
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Private farms	3	28	34	58	72	79	66	72	80	83	94
Leased farms	122	137	114	114	130	139	115	117	117	111	91
Companies APA	72	56	87	78	56	65	49	45	36	30	42
Administered farms	103	79	65	50	42	17	7	3	2	-	-
Production cooperatives	-	-	-	-	-	-	61	54	55	68	73

Source: own calculations based on The 300 List

Results and discussion

Between 1995 and 1998 there were a large number of administered enterprises, which ranked among the top businesses. However, in the following years this form of enterprise did not live up to the requirements of the market economy, and it was transformed by leasing out property or selling it. The number of administered enterprises declined sharply year by year. A similar tendency, but not as considerable, can be observed among the one-man Agricultural Property Agency enterprises. Their highest number ranked best in 1997, while in the following years their share did not exceed 20 per cent. Since 2001, agricultural production cooperatives have been showing positive economic growth. They constituted a significant portion of the top enterprises.

The presentation of changes in top large-area enterprises is based on the area of arable land and employment volume, as seen in Table 2.

The area of arable land owned by the majority of businesses displayed insignificant variation over the entire period analysed. Only administered enterprises showed an ever-decreasing area of arable land. One-man APA businesses had the largest area of arable land; approximately 100 per cent higher compared to private enterprises listed on "The List 300", as well as leased farming businesses. The average arable land area of the best private and leased businesses between 1995 and 2005 equalled to 938 hectares and 947 hectares respectively, and APA businesses had 1.991 hectares of arable land. Agricultural production cooperatives had approximately 761 hectares of arable land. Soil quality according to the soil quality classification was significantly better in one-man APA businesses. Leased and private businesses had similar quality soil and the best-administered businesses had the lowest quality soil.

Table 2

Changes in resources of large-area farming businesses between 1996 and 2005, by organizational forms of business

Years	Indicators				
	Private farms	Leased farms	Companies APA	Administered farms	Production cooperatives
Area of arable land [ha]					
1995	744.3	939.6	1979.5	1280.5	-
1996	787.4	984.8	1975.4	1338.1	-
1997	1168.4	1063.6	1848.3	1260.8	-
1998	1050.3	919.1	1806.3	1131.9	-
1999	1086.6	804.6	1790.0	817.5	-
2000	978.2	829.6	1918.0	668.2	-
2001	811.5	867.8	2084.0	316.0	805.4
2002	890.0	1014.4	2126.3	-	880.4
2003	954.4	1005.7	2108.0	-	690.3
2004	908.2	1003.3	2045.7	-	668.6
2005	939.9	988.4	2221.6	-	762.4
Employment [number of person]					
1995	32.3	44.9	176.3	82.1	-
1996	45.5	46.8	183.7	85.2	-
1997	65.9	48.6	163.5	85.9	-
1998	64.2	39.2	156.8	71.4	-
1999	61.8	27.4	155.3	60.8	-
2000	56.0	26.5	133.9	65.6	-
2001	33.3	30.1	124.6	50.0	49.3
2002	45.9	32.6	128.0	-	52.0
2003	40.1	34.7	122.0	-	32.5
2004	23.6	32.2	95.9	-	29.3
2005	36.7	30.6	107.0	-	45.8

Source: own calculations based on The 300 List

There is a significant downward trend in employment figures in large-area businesses listed on The 300 List, particularly pertaining to one-man APA businesses. Here, the employment has declined by a half. The reduction of workforce also took place in private and leased businesses. The employment rate in private businesses declined from 6 workers per 100 hectares of arable land to under 4, while in leased businesses from almost 5 to just above 3. In APA businesses it declined from over 9 to under 5 workers per 100 hectares of arable land. The employment rate in agricultural production companies remained at the level of 5.5 workers per 100 hectares of arable land. Employment levels depended to a large extent on the type of business operation. The highest employment level can be observed in one-man APA businesses producing live stock and cultivated plants. On average, the lowest employment could be seen in privately managed farms, i.e., those taken on lease by natural entities or other organisational units.

The indicators used to analyse the change in the economic situation of large-area agricultural businesses are based on the financial results and work output (Table 3).

Irrespective of the organizational form of business, the financial results of large-area farming businesses were best between 2004 and 2005, which were the first two years of Poland's membership of the EU. The poorest results could be observed between 1998 and 1999. In addition to the beneficial effects of the Common Agricultural Policy, good results in 2004 were fostered by excellent weather, which contributed to a higher than usual crop yield (Guzewicz et al., 2005).

The comparison of different organisational forms of business by financial result shows a clear disparity. Within the analysed period, it is mostly private farms and one-man APA farms that had the best

financial results. The poorest financial results per business were generated by administered businesses and agricultural production cooperatives. The difference in financial results equalled to 50 per cent.

Work output is the indicator of labour resource productivity. The changes in output of businesses listed on The 300 List are measured by relating added value to the average employment. All the business forms analysed had experienced an increase in work output. Private and leased businesses had the highest and most dynamic output, but one-man APA and agricultural production businesses generated nearly half of the formers' output.

Table 3

Changes of financial result and work output of large-area businesses between 1995 and 2005 by organizational forms of business [in Polish Zloty, PLN]

Years	Indicators				
	Private farms	Leased farms	Companies APA	Administered farms	Production cooperatives
Financial result [1000 PLN/enterprise]					
1995	201.0	237.5	471.4	200.6	-
1996	501.1	341.7	602.2	457.2	-
1997	331.0	199.5	291.3	299.1	-
1998	232.1	108.2	136.3	172.1	-
1999	326.1	105.8	151.2	147.2	-
2000	477.6	202.5	467.5	242.5	-
2001	470.5	253.5	499.0	97.5	272.3
2002	469.9	453.1	441.2	-	157.3
2003	697.2	417.7	557.2	-	216.6
2004	1036.9	1342.5	1823.6	-	507.8
2005	905.0	869.2	1286.9	-	469.6
Work output [1000 PLN /employer]					
1995	26.6	23.7	17.2	18.4	-
1996	39.2	32.6	24.1	27.0	-
1997	38.5	32.9	25.3	28.2	-
1998	42.2	37.3	28.1	33.5	-
1999	45.6	42.2	31.4	35.9	-
2000	58.5	54.1	39.1	37.8	-
2001	67.1	62.3	42.7	40.3	39.4
2002	74.2	64.1	44.3	-	39.5
2003	81.5	68.8	48.3	-	44.4
2004	121.3	97.8	66.1	-	63.2
2005	88.3	74.7	60.4	-	46.4

Source: own calculations based on The 300 List

In The 300 List business profitability ratio comes from relating gross financial result of business operations to the total sales revenue, and other operating and financial revenue. The diagram in Table 4 shows profitability ratios of the analysed businesses by organizational forms of business.

Individual groups of the analysed large-area farming businesses displayed significant diversification in terms of the average business profitability ratios, assets and equity capital between 1995 and 2005. Similarly, the added value ratio, which indicates macroeconomic profitability, varied over the years and among different forms of businesses. Apart from the period from 2001 to 2002, the highest business profitability ratios could be observed in private farms, i.e., businesses where the property owner changed. These businesses also generated positive profitability ratios between 1998 and 1999. In the same period other businesses generated very low ratios. Moreover, the ratio of these businesses was consistently increasing over the analysed period.

Table 4

Profitability ratios of the large-scale businesses between 1995 and 2005 by organizational forms of business

Years	Indicators				
	Private farms	Leased farms	Companies APA	Administered farms	Production cooperatives
Rentability of Sale (ROS)					
1995	15.17	12.68	7.4	6.2	-
1996	17.21	11.82	8.5	11.1	-
1997	8.75	6.1	3.68	8	-
1998	5.25	3.24	1.44	4.15	-
1999	6.06	3.78	1.59	4.71	-
2000	9.55	5.86	3.58	1.94	-
2001	9.87	6.54	3.33	1.88	5.64
2002	9.8	7.47	3.25	-	3.75
2003	12.18	8.44	4.32	-	5.34
2004	21.34	17.53	10.4	-	15.2
2005	12.35	11.03	6.33	-	6.83
Rentability of Assets (ROA)					
1995	27.42	28.63	26.70	18.42	-
1996	30.75	27.62	29.60	21.47	-
1997	26.68	22.23	26.03	24.79	-
1998	24.72	20.31	26.64	24.34	-
1999	22.16	20.30	26.07	31.00	-
2000	23.41	18.34	23.60	24.54	-
2001	22.65	18.53	21.06	36.46	20.16
2002	19.39	18.84	20.36	-	22.77
2003	20.66	19.30	19.45	-	23.37
2004	24.28	20.03	19.27	-	27.22
2005	20.32	16.65	16.28	-	21.29
Rentability of Equity (ROE)					
1995	24.14	45.38	6.81	3.89	-
1996	37.89	64.93	9.61	8.59	-
1997	17.80	34.54	4.10	6.37	-
1998	7.32	2.61	1.40	3.93	-
1999	5.02	-20.28	1.67	4.17	-
2000	13.89	22.92	4.28	-1.54	-
2001	14.43	32.11	3.49	2.24	4.68
2002	13.85	22.58	2.71	-	3.71
2003	15.86	22.40	3.35	-	5.77
2004	30.15	43.88	8.97	-	15.63
2005	13.60	18.80	5.02	-	5.66

Source: own calculations based on The 300 List

Diversification of returns on assets over the analysed period and among businesses was small. The lowest returns on assets could be observed in leased and administered businesses. Conversely, one-man APA businesses generated the highest returns. Over the analysed period one asset value unit generated approximately 0.20 value added units.

In terms of return on equity, the leased businesses performed particularly well, and the worst performers are one-man APA businesses. Also administered businesses had a very low return on equity. On average it equalled merely to 3.9 per cent in the analysed period.

Conclusions

Between 1995 and 2005 the most numerous group of agricultural businesses, which were established on the basis of state-owned agricultural property and ranked as the best, were businesses taken on lease by various business entities. Their share was around 40 per cent of all enterprises. The share of private businesses, i.e., businesses which were acquired or partially purchased from the State Treasury, was annually increasing. Among others, this was due to the increase in the number of such farms, as they were not many in the initial stage of privatisation. Between 1995 and 1998 a large number of administered businesses showed positive economic results. Nevertheless, in the following years they were privatised by selling the property or leasing it out. Declining figures could be seen among one-man APA businesses. Since 2001 many agricultural production cooperatives were among the top businesses ranked in The List 300.

Between 1995 and 2005 there was a small variation in the area of arable land in individual businesses but it was significant among them. Businesses totally controlled by the State Treasury (one-man APA and administered businesses) had larger arable land area, particularly in relation to private and leased businesses. There were also different soil quality levels: APA businesses had the best and administered businesses had the worst soil quality. It also needs to be emphasised that the businesses listed on The 300 List had good and very good soil quality levels.

The employment level in large-area farming businesses listed on The 300 List showed a strong downward trend across the board. However, individual business forms displayed varied employment levels. One-man APA businesses had the highest employment. Businesses leased by natural entities and other organizational units displayed the lowest average employment.

Work output grew in all organizational business forms. Private and leased businesses had the highest and most dynamic work output.

In terms of profitability, the analysed large-area farming businesses had met significant difficulties in 1998 and 1999. On contrast, their situation was excellent between 2004 and 2005. Purchased farming businesses turn out to be the most effective business form in terms of business profitability. Leased businesses had a good return on equity, and one-man APA and administered businesses created added value measured in relating value added to the total revenue.

As a conclusion one could argue that however the companies are ranked among the best enterprises on The List 300, their economic results are different. The differentiating factor becomes in this case the legal form of their organisation. The analysis shows that the private companies obtain the best economic results.

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Assessment of Economic Viability for Agricultural Holdings Included into the FADN of Latvia

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Abstract

The issue on ensuring a sustainable economic performance and financial stability in rural commercial companies has become more topical with the increase of economic growth rate and volumes of attracted financial resources, also in rural development projects.

The research aim – to characterise the factors leaving an impact on the origination of financial risk with an especial attention being paid to the balancing of the share of loan capital in the capital structure and the dynamics of economic viability indicator for agricultural holdings included into the FADN of Latvia as well as to identify the problematic aspects.

The research comprises the study on the scope of crediting in Latvian commercial companies of agricultural, forestry and hunting sector for the period between 2000 and 2007; the study on the structure of equity capital and loan capital for the agricultural holdings included into the Farm Accountancy Data Network for the period between 2000 and 2006; the description of its dynamics grouping the farms by economic size units ESU (ESU - economic size unit) and by regions; the assessment of economic viability indicators of farms included into Latvian FADN for the period between 2004 and 2006 as well as the summary on economic viability indicators by regions at the end of 2006.

Introduction

The issue on ensuring a sustainable economic performance and financial stability in rural commercial companies has become more topical with the increase of economic growth rate and volumes of attracted financial resources, also in rural development projects. Several risks management specialists (Crane L.M. (2003); Lemsalu K. (2004)) have analysed financial risk factors in agricultural enterprises and business companies, and the possibility to undertake risk and earn additional income by means of skilled risk management; the use of financial leverage effect and its impact on the future development of a company are studied by Бригхэм Ю., Гапенски Л. (1999); Финнерти Дж., Ли Ч. (2000); Lemsalu K. (2004); Raudsepp V. (1999); Jakušonoka I.(2007,2003, etc.). The methods for attracting borrowed funds and credit risk assessment have been analysed by: Бланк И.А. (2002); Jakušonoka I. (2005); Jakušonoka I. (2002); Andersson H., Ramamurtie S.B., Ramaswami B. (1995) etc.). The methodology for risk management on the company level has been elaborated and studied by Crane L.M. (2003); Andersson H., Ramamurtie S.B., Ramaswami B. (1995); Kay, R.D.(1986); Чернова Г.В., Jakušonoka I.(2005); Šuškeviča J. (2005) etc.

The research aim – to characterise the factors leaving an impact on the origination of financial risk with an especial attention being paid to the balancing of the share of loan capital in the capital structure and the dynamics of economic viability indicator for agricultural holdings included into the FADN of Latvia as well as to identify the problematic aspects.

Tasks:

- to study the scope of crediting in Latvian commercial companies of agricultural, forestry and hunting sector for the period between 2000 and 2007;
- to study the structure of equity capital and loan capital for the agricultural holdings included into the Farm Accountancy Data Network (FADN) for the period between 2000 and 2006; to characterise its dynamics grouping the farms by economic size units ESU (ESU - economic size unit) and by regions;

- to assess the economic viability indicators of farms included into Latvian FADN for the period between 2004 and 2006 as well as to summarise the economic viability indicators by regions at the end of 2006.

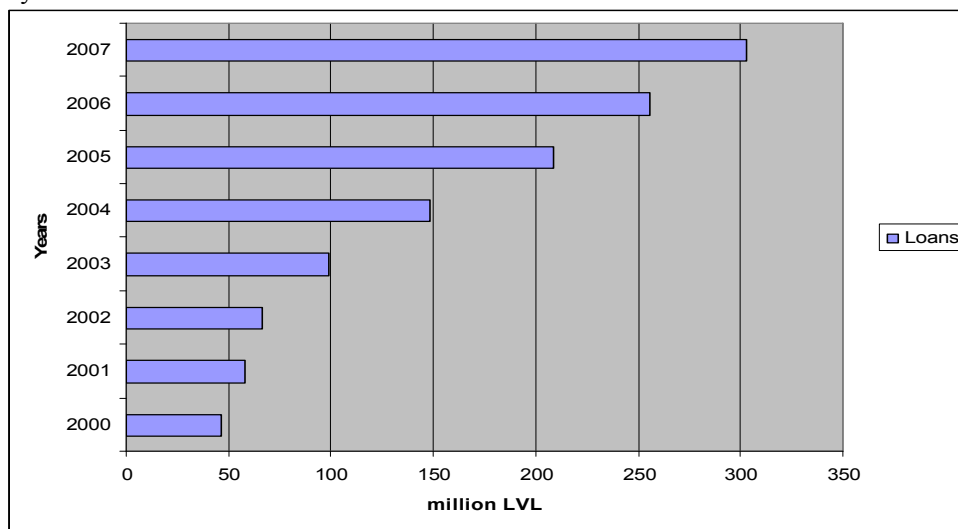
Materials and methods

The following methods have been used for the research purpose: logically constructive and inductively constructive method, induction method and methods of mathematical statistical data processing as well as the method of statistical grouping and graphical method.

The research provides the analysis of the information compiled by the Central Statistical Bureau of Latvia, materials published by the Farm Accountancy Data Network of Latvia (FADN) for the period of 2000-2006, the data of the Ministry of Agriculture of the Republic of Latvia and the Rural Support Service, and theoretical and methodological studies on corporate financial risk in terms of management. The calculation of economic viability indicators is based on the “*Procedure by which State and European Union Support is Allocated for Rural Development under the Open Tender Procedure of Project Applications*”, the Cabinet Regulations No. 314 and other economic indicators.

Results and discussion

The amount of loan capital and other financial resources invested in the sector increase annually with the dynamic development of agriculture (Figure 1). From December 31, 2000 to December 31, 2007 the credit balance in the enterprises of agricultural, forestry and hunting sector has increased 6.5 times and has reached LVL 303 million, thus equalling to 4.3% of the total amount of loans disbursed in the national economy.



Source: Statistics of banks, 2000- 2007

http://www.fktk.lv/lv/statistika/kreditiestades/ceturksna_parskati/20071231_banku_darbiba_latvija

Figure 1. The balance of loans disbursed to the agrarian, forestry and hunting sectors, million LVL

It means that rural enterprises actively use loan facilities; however thus increasing credit risk, since according to the Central Statistical Bureau in January 2008 the average interest rate on long-term loans in lats has reached 15.8%, that is 1.5 times higher than in January 2004. The average interest rate on long-term loans in euros has not fluctuated so much, and is considerably lower – 6.4% in January 2008.

Nevertheless the rapid increase of credit resources and other financial liabilities is an essential factor that may significantly influence financial results, solvency and economic viability indicators of commercial companies in long term. The operating results and financial stability depends to a great extent on the volumes of production and services, net turnover, balance between assets and liabilities as well as the efficiency of the use of equity capital. To assess the growth dynamics of economic viability indicators for the

period from 2000 to 2006, the authors have compiled the most important economic indicators of the holdings included into the FADN with the aim to ascertain their trends of dynamics.

Table 1
Indicators affecting the economic viability of agricultural holdings included into the FADN of Latvia, in lats per one agricultural holding on average

Indicators	2001	2002	2003	2004	2005	2006	2006/2001 %
Current assets	4597	8904	9365	12579	16475	15199	331
Assets	14802	25824	27450	34489	47672	49431	334
Short-term accounts payable	634	2329	2147	3030	4685	4754	750
Depreciation	716	1437	1575	2003	2986	3302	461
Net profit	-1097	-1097	-27	3805	2556	3429	X
Equity capital	13253	20448	21807	25423	31405	34642	261
Long-term investments	10205	16920	18085	21891	31197	34233	335
Long-term liabilities	915	3047	3495	6036	11583	10035	1097
Subsidies on interest paid	22	31	46	78	90	131	595
Subsidies on investment	101	219	776	544	3222	1697	1680
Number of farms	349	484	707	796	932	987	283

Source: FADN (2001,....2007);

The analysis of the most significant economic indicators per one agricultural holding on average (Table 1) suggests that between 2001 and 2006 the agricultural holdings included into the FADN of Latvia have developed dynamically. Their assets, current assets and long-term investments have increased 3.3 times, the short-term liabilities have grown 7.5 times, while the long-term liabilities have even gone up more than 10 times. The farms structure the majority of their financial resources by means of subsidies, as during the period analysed the subsidies on investment have increased 16.8 times.

Table 2
The dynamics of economic viability indicators for agricultural holdings included into the FADN of Latvia within 2001-2006 (calculated per one agricultural holding on average)

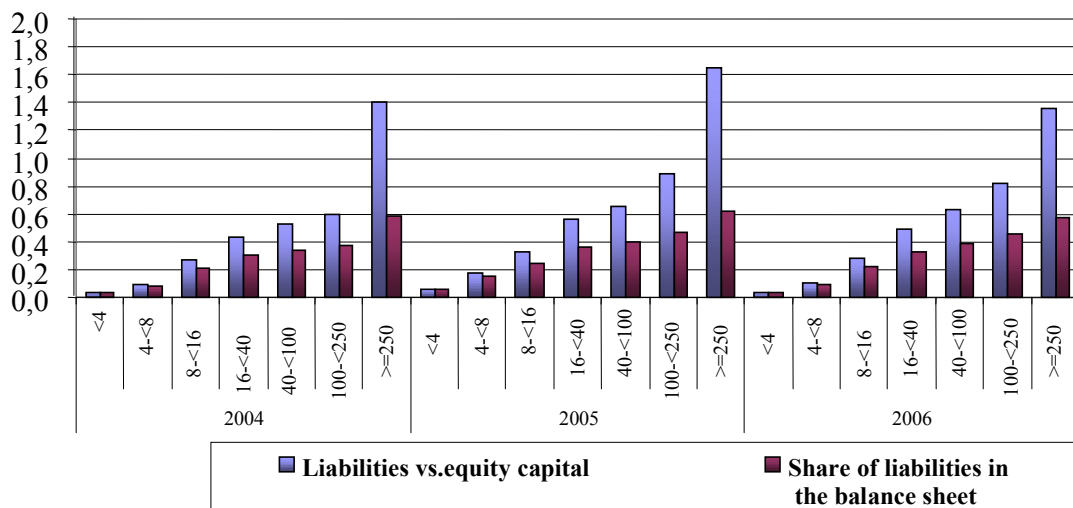
Indicators	2001	2002	2003	2004	2005	2006	2006/2001 %
Economic viability (equity capital/assets)	0.90	0.79	0.79	0.74	0.66	0.70	78
Economic viability (current assets/short-term accounts payable)	7.25	3.82	4.36	4.15	3.52	3.20	44
Economic viability (net profit + depreciation*50%)	-190.50	170.00	773.74	2904.00	2771.00	3365.50	x
Cover of long-term investments by equity capital	1.30	1.21	1.21	1.16	1.01	1.01	78
Cover of long-term investments by equity capital and long-term liabilities	1.39	1.39	1.40	1.44	1.38	1.31	94
Cover of current assets by short-term liabilities	0.14	0.26	0.23	0.24	0.28	0.31	227
Net current assets	3963.00	6575.00	7217.54	9549.00	11790.00	10445.00	264
Liabilities vs. equity capital	0.12	0.26	0.26	0.36	0.52	0.43	365
Share of liabilities in the balance sheet	0.10	0.21	0.21	0.26	0.34	0.30	286

Source: FADN(2001., 2007.)

Totally in 2006 the economic viability indicators for agricultural holdings included into the FADN of Latvia have declined in farms of all sizes compared to 2001 (Table 2). It is distinct that a sweeping

attraction of borrowed resources started with the introduction of pre-structural funds (SAPARD, ISPA etc.) and structural funds for rural development from 2002-2003. Therefore it was critical to analyse the changes in economic viability indicators of farms for the period between 2004 and 2006 as well as to provide more profound assessment of the situation by farms of different economic sizes and regions.

Figure 2 shows the largest proportion of liabilities against the equity capital in the largest farms, where liabilities exceed the amount of equity capital ca. 1.3 times. The indicator denotes no sharp increase, thus suggesting proportionally similar increase both in liabilities and equity capital.

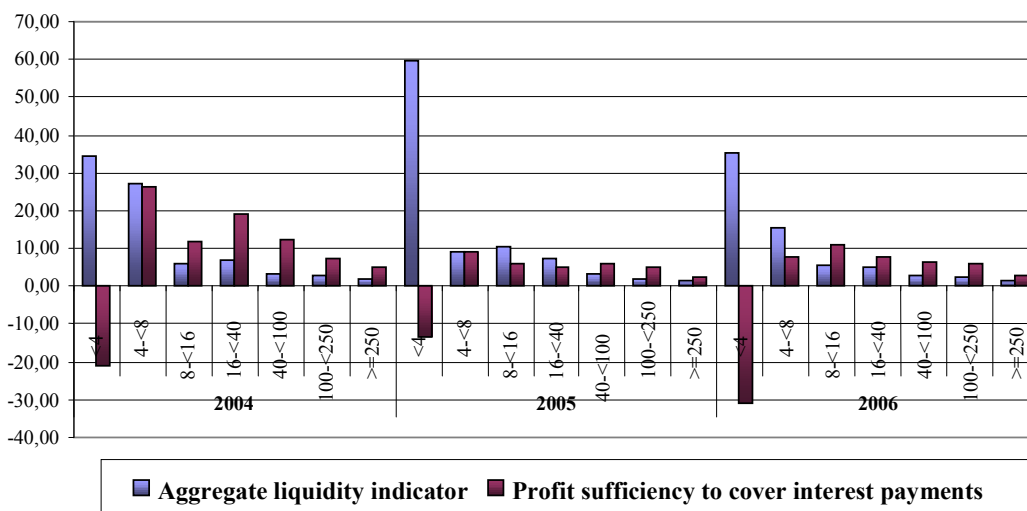


(Legend: proportion of liabilities vs. equity capital; share of liabilities in the balance sheet)

Source: figure made by the authors according to the FADN data

Figure 2. The proportion of liabilities vs. equity capital, and the share of liabilities in the balance sheet for the agricultural holdings included into the FADN by size between 2004 and 2006

The share of liabilities in the balance sheet provides a similar tendency. It ranges within 0-0.6 for the agricultural holdings included into the FADN, thus noting no negative equity capital for any farm.



(Legend: total liquidity indicator; profit sufficiency to cover interest payments)

Source: figure made by the authors according to the FADN data

Figure 3. Aggregate liquidity indicator and profit sufficiency to cover interest payments for the agricultural holdings included into the FADN by size between 2004 and 2006

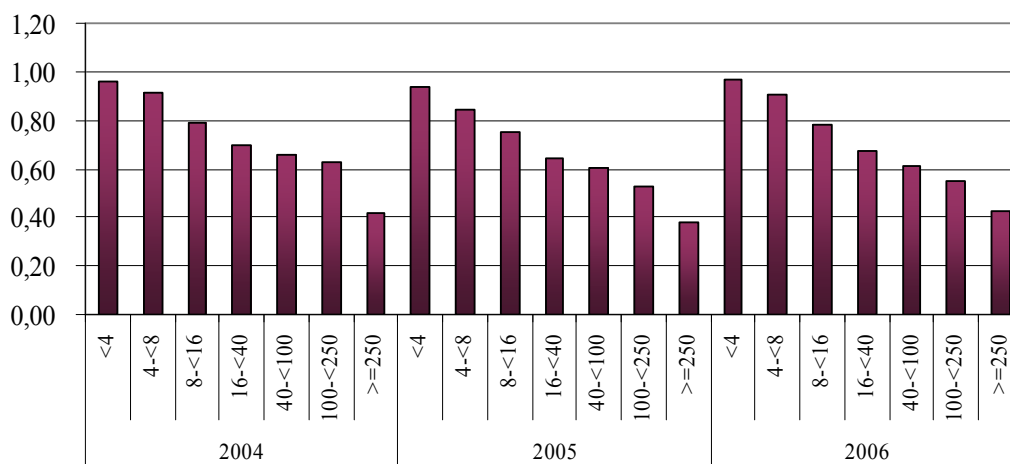
The calculation of aggregate liquidity ratio (Figure 3) suggests that the sufficiency of cash is observed in the small farms, though it shall be noted that difficulties to receive loans may serve as an explanation here. The analysis of the profit sufficiency indicator to cover interest payments shows that the mentioned indicator is negative in this group of farms due to the losses incurred by the mentioned farms during the years studied. For the largest farms the indicator ranges within 1-4, thus indicating an increased credit risks for these farms.

Rural farms when elaborating and implementing investment projects have to encounter different risks, where financial risks cause the most essential threats. Therefore the research will focus on the study of possible mechanisms for risk elimination, and supervision and control of financial risks.

The condition of economic viability is different, and is determined by the scope of planned project. It is a positive cash flow for small agricultural holdings, where the amount of modernisation project does not exceed LVL 70 000. Larger projects require the drafting of financial plan for the years of project implementation and one year after the project implementation – here the financial position of an enterprise and the financial report of the last completed year play a significant role.

After the project submission, the Rural Support Service evaluates them, and examines the achievement of economic viability criteria, and the necessary increase during the year after the project implementation. In case the viability criterion is not met, the project is rejected. The compliance of the agricultural holdings included into the FADN with the economic viability criteria is evaluated according to the data of the rural Farm Accountancy Data Network (FADN) of Latvia.

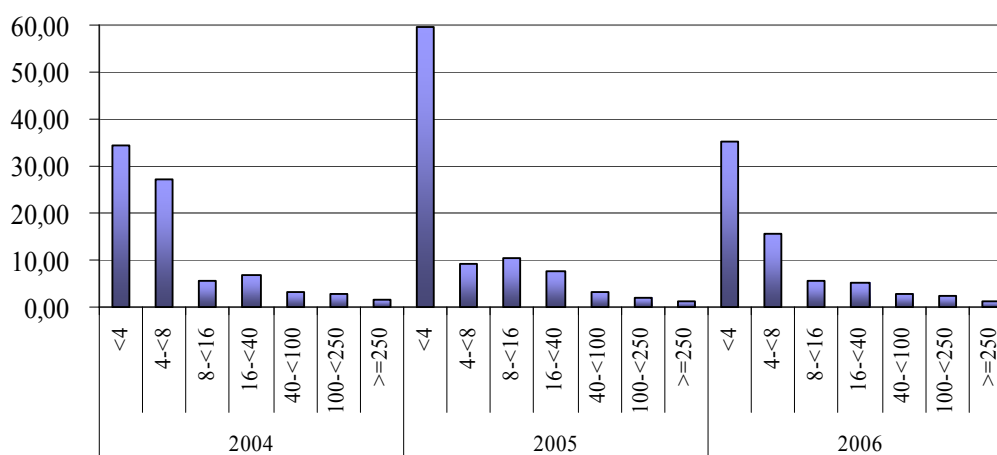
During the entire period analysed the economic viability criterion (equity capital vs. assets) for all farms of the FADN by economic size (Figure 4) exceeds the set limit 0.2. For small farms this indicator is bigger than for large farms thus denoting that proportionally the equity capital is larger than assets. Certainly it also relates to the share of loans in the balance sheets of large farms.



Source: calculations done by the authors according to the FADN data

Figure 4. Economic viability indicator (equity capital/assets) for the agricultural holdings included into the FADN by economic size units between 2004 and 2006

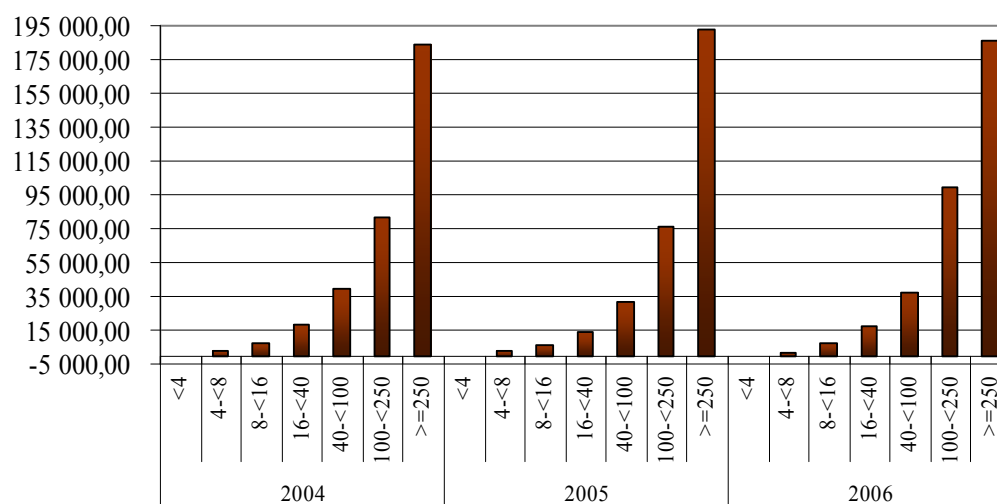
Although the indicator is better, and small farms have no large amounts of borrowed capital, it cannot be unequivocally assessed as a positive signal, since it shows that small farms are not competitive enough to modernise their farms, they experience difficulties in receiving loans. The mentioned aspects have also affected the lack of profit in 2004, when the economic viability indicator consisting of profit is lower than the set limit (Figure 5) due to the losses incurred by small farms.



Source: calculations done by the authors according to the FADN data

Figure 5. Economic viability indicator (current assets/short-term accounts payable) for the agricultural holdings included into the FADN by economic size units between 2004 and 2006

Therefore the following relation appears: the first two economic viability indicators are larger in small farms, while the third indicator neither is met nor exceeds the set limit (Figure 6). Little production outputs and cash turnover in small farms may serve as an explanation as well as large costs that hinder earning of sufficiently big profit. Starting from 2005 the amount of losses in small farms is slightly decreasing, and the depreciation value of fixed assets is increasing, which in 2006 ensure the compliance of the third economic viability indicator with the set limit. It could be explained by the modernisation of small farms held between 2004 and 2006 by means of the following measures of the Rural Development Plan “Restructuring of Semi-subsistence Farms” and “Meeting of the EU Standards” as well the area payments used to increase the value of fixed assets and revenues.



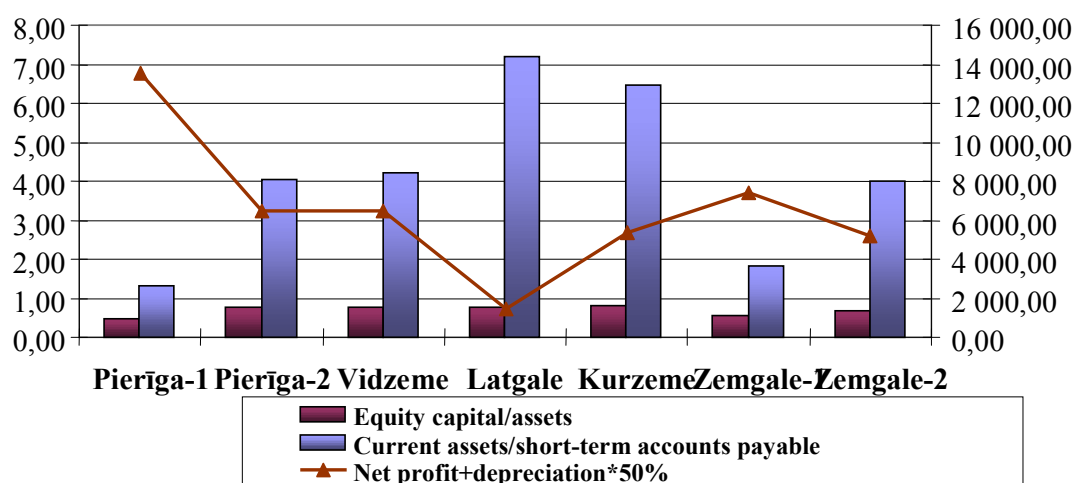
Source: calculations done by the authors according to the FADN data

Figure 6. Economic viability indicator (net profit + depreciation*50%) for the agricultural holdings included into the FADN by economic size units between 2004 and 2006

The performed analysis allows concluding that in 2007, when the acceptance of projects under the measure “Modernisation of Rural Farms” of the Rural Development Programme for 2007 – 2013 was

initiated, the agricultural holdings included into the FADN, excluding small farms on average had reached the economic viability in the last concluded year (i.e., in 2006). However it cannot be attributed to all Latvian farms. Presumably part of rural farms left the implementation of the projects for 2008, and tries to strike the reports for 2007 as possibly better to reach these viability criteria. In case farms were willing to apply for small scope projects, where the eligible costs were under LVL 70 000, then economic viability was proved by positive cash flow, and the farms did not experience so big difficulties in reaching this criterion.

The calculation of economic viability according to the breakdown of different size farms by regions (Figure 7) suggest that the most viable farms are observed in Zemgale 1 (the districts of Bauska, Dobele and Jelgava) region and Pierīga 1 (Rīga, Rīga district and Jūrmala) region. Although Latgale (the districts of Balvi, Rēzekne, Ludza, Preiļi, Krāslava and Daugavpils) region shows better the first two indicators, yet it mainly relates to the fact that small amount of loan capital is used in this region, which is positive from the point of view that the farms have bigger liquidity; however the fact that farms do not attract capital for modernisation of production is negative. Loan inaccessibility might be explained by the fact that the farms of Latgale show the lowest profit of all the farms of the studied regions. The largest profit is observed in already mentioned Pierīga 1 and Zemgale 1 as well as Vidzeme (the districts of Valmiera, Valka, Cēsis, Alūksne, Gulbene and Madona) regions.



(Legend: equity capital/assets; current assets/short-term accounts payable; net profit+depreciation*50%)

Source: figure made by the authors according to the FADN data

Figure 7. Economic viability indicators for the agricultural holdings included into the FADN by regions in 2006

Large farms in all the regions shall pay more consideration to liquidity and solvency, since they possess sufficiently large amounts of borrowed capital, which ensures the development of farms, yet at the same time causes financial risks, especially at the time when loan interest grows.

The economic viability indicators shall increase during the next year after the project implementation (the financial position shall improve). Later the officials from the Rural Support Service or the European Union may audit these indicators providing either a physical or financial control. In 2007 the representatives of the Rural Support Service mentioned that the farms having not met the mentioned indicators would not be obliged to repay the EU funding received after the project implementation. However this provision may be changed, therefore the farms should carefully follow their financial position.

Due to the assessment of possibilities for risk projection and management in the investment projects of rural farms, it may be concluded that rural entrepreneurs should use risk aversion measures to eliminate risk occurrence up to the minimum. It is especially significant during the project preparation period, as then the risks, the elimination of which require the skills and knowledge of the entrepreneur him/herself, occur. It is

essential to ensure the risk monitoring during the project implementation and supervision, thus greatly considering the following financial indicators:

- liquidity indicator, which allows assessing the ability of an enterprise to cover its short-term liabilities to maintain a positive cash flow in the enterprise, which is significant not only during the project implementation, when a risk of project cost excess is possible, but also to ensure a successful operation of the enterprise;
- share of the equity capital in the balance sheet as well as the proportion of the equity capital versus borrowed capital, which suggests the enterprise stability and independence from creditors. These indicators are important for the enterprise to be able to invest in it also in the future, since the evaluation of the enterprise independence is substantial for the credit institutions to understand that an enterprise is able to invest more resources into its development, and later on increase the productivity and successfully continue its operation;
- profit sufficiency to cover interest payments. This indicator is essential to ensure a positive cash flow and have no problems to pay for the liabilities undertaken by the farm.

Conclusions and proposals

1. In 2007, when the acceptance of the Rural Development Programme for 2007 – 2013 was initiated, the agricultural holdings included into the FADN on average had reached the economic viability in the last concluded year, i.e., in 2006 (excluding small farms, which encountered problems due to the losses from the economic performance).
2. The calculation of economic viability according to the breakdown of different size farms by regions suggest that the most viable farms are observed in Zemgale 1 and Pierīga 1 regions. The largest profit is observed in Pierīga 1 and Zemgale 1 as well as Vidzeme regions. Large farms in all the regions shall pay more consideration to liquidity and solvency, since they possess sufficiently large amounts of borrowed capital, which ensures the development of farms, yet at the same time causes financial risks, especially at the time when loan interest grows.

The agricultural holdings shall carefully follow their financial indicators also after the project implementation, especially considering the following indicators:

- liquidity;
- share of equity capital in the balance sheet and proportion against liabilities;
- profit sufficiency to cover interest payments.

During the project implementation the agricultural holdings should:

- control the cash flow in an enterprise to be able to cover not only the usual monthly payments, but also ensure financial resources to prevent the consequences caused by the risk to exceed the costs allocated for the project activities;
- monitor the performance of the project activities;

During the project supervision the agricultural holdings should:

- plan financial resources for the repayment of loan interests and debt principal to avoid the credit risk. The state support providing partial coverage of interest paid may facilitate this situation;
- continue monitoring cash flow in the enterprise;
- follow liquidity and solvency indicators of the enterprise duly recognise risk factors possible in the future, and elaborate risk aversion or elimination threats.

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Development of the Accounting System in Latvia

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Abstract

The researched problem includes the main tasks of accounting, their peculiarities and appropriate application to the accounting, the system of analysis, calculation of cost price, planning and control of the company and natural entities' measures of business activities, aimed at decision making with the goal to ensure qualitative functioning of business management and economic growth in Latvia. The article describes the development of the accounting system in Latvia. The development of the accounting system was analysed paying attention to the following historical periods: 1) reorganization of accounting after the renewal of the independence of Latvia (1990-2001); 2) integration period with European accounting system (since 2002). The aim of this article is to analyse the accounting system of Latvia taking into consideration the main achievements in the accounting theory and practice. It has been proved that two historical periods have a critical role in the development of bookkeeping in Latvia. The analysis of the normative documents that significantly affect the accounting system of Latvia is done on the basis of the article.

Key words: accounting system, peculiarities of accounting, audit and analysis

Introduction

Bookkeeping develops alongside with manufacturing. It accrues and systematises economic information necessary for managing the production process. Accounting is a constant observation of the economic activity, registration and aggregation of the facts of business life according to a specific system. The more complete is the system, the more efficient is the accounting.

It is the responsibility of every company to do accounting and, based on its data to offer truthful information about the business and its financial outcomes to the State Revenue Service, the State Statistical Bureau and in some cases also to banks and other organizations. For the information to be clear and available to the users, it has to be systematised and summarised observing the interests of the users. Mainly the information is summarised in reports.

To execute the accounting tasks successfully, and following the provisions of regulatory enactments, a concrete system based on these provisions should be developed. The law "On Accounting" of the Republic of Latvia provides that a company manager can organise the accountancy work:

- 1) by establishing accounting as an independent company department;
- 2) based on the signed agreements, by outsourcing services of accounting or other companies.

One can observe a continuous growth in the accounting system in Latvia and following the respective formulations in relation to the International Accounting Standards.

One of the directions in reforming accounting according to the International Accounting Standards is improving the knowledge of the accountant and change of his/her role in the company management. Any manager is interested in the financial situation of the company, in financial planning and in investment activities. In Latvia, big attention is paid to the development of accountant's profession, to the training and skills improvement of accounting specialists as required by the labour market.

Work of a certified auditor is legally determined by the law "On Certified Auditors" and the law "On Annual Reports". In practice certified auditors work as provided by the International Reporting and Auditing Standards.

The aim of the research is to disclose and reveal the range of problematic accounting issues including those peculiarities that have to be taken into account when working out the state economic policy to increase competitiveness.

To achieve the aim, the following tasks were set:

- to study the accounting system of Latvia;
- to reveal and study the peculiarities of accounting, audit and analysis in Latvia.

Materials and methods. Laws and respective regulatory enactments on the organisation and procedures of accounting served as initial information about the research topic, as well as study of the historical development of the accounting system since 1990, the Accounting Standards of Latvia (ASL) and the International Accounting Standards (IAS). The method of analysis, synthesis, and logically constructive and monographic methods were used in the research.

Results and Discussion

After the Declaration of Independence was adopted (May 4, 1990) and the Soviet Union collapsed, Latvia had to create new legislation. It marked the beginning of the transition period from centralised command economy to market economy. It meant reconsidering the former state power institutions and the legislation. The political situation determined the development of a new legislation basis for bookkeeping, taxation policy and audit. The reform of accounting began.

Latvia had to decide which accounting system to introduce. One of the models of the countries of the European Union was offered to be chosen or another way was to reform the existing accounting system including the market economy relations. The Danish system was chosen on the basis of the concept [Benze J.,1998.]. The choice was based on the following reasons:

- the Danish accounting system most precisely corresponded to the requirements of the international standards;
- Denmark, like Latvia, is a small country, which possesses a unified system of accounting and customs.

The first legislative documents on accounting were approved by the Supreme Soviet of Latvia on October 14, 1992:

- Law “On Accounting” [Grāmatvedības likums, 1992];
- Law “On Company Annual Reports” [Gada pārskatu likums,1992].

On May 13, 1994 the Ministry of Finance issued Order No. 63 which established a unified accounts plan. Further Latvian legislation was harmonised with the Directives on accounting in the European Union, the International Accounting Standards and American standards. Regulatory accounting documents are being constantly developed in Latvia, and they serve as the main basis for being ready for financial accountancy to the European Union.

Latvian Accounting Standards (LAS) are worked out by the Accounting Council of Latvia. Standards are approved by the Cabinet of Ministers of Latvia [LGS, 2007].

With Latvian economy being open to foreign investors, the requirements to the accountancy reliability and precise reflection of information have increased. It was the reason for adoption of the Regulations of the Cabinet of the Republic of Latvia No. 230 “On the Organization of Company Audit” of December 19, 1990. The main task of the auditors was to provide audits and controls of business clients and other clients on solvency issues, on accounting reliability, as well as to offer consultations on financial and accounting issues.

To ensure an independent audit, during the state reorganization, a reform in business activities, taxation policy, accounting and control was carried out:

- auditing was performed as provided by the law of the Republic of Latvia “On Entrepreneurship” of September 26, 1990 [Uzņēmējdarbību likums, 1991.];
- to ensure the control of financial and business activities of joint companies and foreign legal entities and natural entities, a state audit firm was developed within the framework of the Ministry of Finance.

With the decision of the Supreme Soviet of the Republic of Latvia of December 5, 1990 “On Approving the Law “On Joint-Stock Companies”” and the decision of the Council of the Ministry of Finance on March 28, 1991 two regulatory enactments were approved:

1. “On the Work of the Auditors Council” which was approved by the Council of the Ministry of Finance in March, 1991;
2. “Instruction on the Organization of the Auditors’ Work in the Republic of Latvia” which was approved by the Council of the Ministry of Finance in April, 1991.

To ensure the accountancy reliability, other regulatory enactments on business activities required compulsory auditing of annual financial reports. This became the prerequisite for training new professionals – certified auditors.

On December 15, 1992 the Supreme Soviet of the Republic of Latvia adopted the Law “On Certified Auditors”. However, the law was not implemented due to the reform in the country, and therefore in November, 1996 a new law on certified auditors was adopted. On May 3, 2001 the Parliament of the Republic of Latvia adopted the third law on certified auditors [Zvērinātiem revidentiem likums, 2001.]. The first law turned out to be not effective. The Methodological Council on Bookkeeping could interpret the articles on auditors of this law as they wished. This partly did not facilitate the control of the development of business activity. There were periods when reforming the structure of ministries, control departments were liquidated, and there was no demand for specialists. Vague legislation led to the permissiveness of entrepreneurs concerning accounting and control, attracting unqualified staff.

The Law “On Annual Reports” provides that annual financial reports shall be audited by certified auditors. The principles of accounting require that annual reports shall reflect reliable information about the situation with assets concerning their composition and placement, and the sources of their origin in the reported figures, about financial results and cash flow during the reporting period [Gada pārskatu likums, 1992.]. This fully complies with the fourth 93/22 EEC Directive of the European Union on the reflection of reliable information. Latvian Association of Accountants (LAA) and Certified Auditors (LACA) have contributed much to the development of the accounting system and audit.

LAA was founded in 1994. This is an independent professional organisation which unites accounting specialists, financiers, lawyers on business issues, academic staff from vocational and higher educational establishments, researchers. To date, LAA has more than 300 members. The main tasks of the Association of the Accountants are:

- to increase the level of knowledge and skills;
- to promote best practices from Latvia and abroad;
- to ensure the evaluation and certification of accountants;
- to organise training courses and seminars;
- to ensure the observance of professional ethical code of accountants, and to strengthen their prestige.

From 2000, LAA is a member of the International Association of Accountants, Educators and Researchers (IAAER) and the European Association of Accountants (EAA).

LACA was founded in 1994. Its founders are certified auditors. It is a public organisation which unites all certified auditors of Latvia. The main tasks of the Association of Certified Auditors are:

- to work our accounting and auditing standards as provided by the International Auditing Standards and the International Accounting Standards;
- to organise the exams to the candidates of certified auditors and their certification;
- to register certified auditors and control their professional activities.

LACA successfully cooperates with different institutions and organizations in Latvia and abroad. Among its international partners one can mention: International Development Agency in the USA; Scandinavian Council of Accountants and Consultants; Association of Auditors in Norway; representatives of the World Bank; International Accountants Federation; consultancy auditing companies abroad.

In the market economy the independence of a company has grown. Latvia has the Commercial Register that protects the rights and legal interests of societies, legal entities and physical persons in the area of business. The annual report contains the information about the financial and business operation of the company, which is available to its users. The annual report shall give a reliable and clear picture about the company assets and liabilities, its financial situation and profit and loss. The law “On Company Annual Reports” provides that annual reports and statements of the company management shall be checked by certified auditors. They are chosen in the general meeting of the owners if the company exceeds two of the following criteria: total balance LVL 200 thousand (EUR 140.6 th.), net turnover – LVL 500 thousand (EUR 351.4 th.), the average number of employees for the reporting period – 25 people [Gada pārskatu likums, 1992.].

In order to maintain the image of the profession of certified auditors, to facilitate their professional growth, as well as to create standards of their professional activities, certified auditors of Latvia have joined the Association of Certified Auditors. From the above described it is possible to conclude that a certain system of training certified auditors has been implemented and is working in Latvia, and that the legislative basis for their professional activities and control of professional services has been established.

Still ten years ago it seemed impossible to harmonise the standards of financial accounting with the requirements of the European Union and other international standards. Requirements on how to make annual

reports were individual and different in every country, as the countries were different themselves. Countries tried to keep their individuality and left the different norms in legislation. It was considered as national identity, traditions and part of their independence. It was not an easy task to find common grounds in solving this problem. However, with the development of the common European market these complicated issues also had to be solved.

On the basis of the fourth 93/22 EEC and the sixth 89/29B/EEC Directive the movement towards the harmonisation of European accounting system began in Latvia. These Directives provide norms for introducing accounting in companies of the European Union. The fourth Directive is the most significant document that determines ways, forms and methods of harmonisation and unification of accountancy in Western European countries. This Directive:

- sets requirements for the format (listing and grouping of entries) of balance sheets, and profit and loss statements;
- contains a set of main requirements the accounting report of private companies, joint-stock companies and limited companies shall follow.

Banks and insurance companies base their accounting policy on other directives. European directives were set in force at the end of the 1970s and the beginning of the 1980s of the previous century. The minimum level of comparing bookkeeping and reporting in the European Union is ensured by the directives. To change the accounting policy effectively, norms of the directives were included in the national legislation. This was a labour-consuming and time-consuming process in all the countries. At the same time the directives allow freedom in interpreting them, which gives the opportunity to maintain differences in financial standards of European countries [Панков Д., 2003].

The main organisation that deals with working out international standards is a special International Accounting Standards Committee (IASC). Those procedures that historically were developed in English-speaking countries, mainly the USA and the United Kingdom, create the basis for the development of international accounting standards. The participation of IASC in a common programme with the International Organisation of Securities Commission (IOSCO), which unites institutions running world stock exchanges, is an important fact emphasising the increasing significance of the International Accounting Standards [International Standards, 2005].

Bookkeeping traditions of every country significantly differ from the requirements of the IAS, which causes serious difficulties for the transition from national accounting standards to the international ones. Latvia belongs to that group of countries in which the local accounting developed in close concordance with the IAS [Zariņa V., 2004.]. In Latvia the development of national accounting standards based on the IAS has started. Within the LACA (Latvian Association of Certified Auditors) a commission was formed that deals with the development of Latvian standards. At the moment LTCSA (Latvian Technical Committee for Standardisation of Accounting) is responsible for developing national accounting standards. For a company it is very important to duly understand all aspects related to ensuring the requirements of international standards for accounting. In the initial stage it is necessary to evaluate the difference between the existing accounting practice and the international requirements. When making the final report, accountants shall comply with the norms of the Latvian Accounting Standards (LAS). The annual reports for the year 2007 include the requirements existing in already eight standards (in total nine standards have been approved):

- 1) main principles for preparing financial reports;
- 2) cash flow statements;
- 3) events after the balance sheet figures;
- 4) changes in the accounting policy, accounting values and errors of the previous years;
- 5) long-term agreements;
- 6) revenues;
- 7) fixed assets;
- 8) accumulation;
- 9) investment capital [LGS, 2007.].

The role of International Accounting Standards grows with every year in the world. It can be explained by the fact that IAS is commonly accepted principles of accounting and reporting. Standards are not a dogma or normative documents regulating concrete types of accounting and report making norms; they have a permissive character. IAS give the opportunity for specialised organisations in Latvia to make their own accounting policy, choosing specific rules for bookkeeping, accounting and procedures for reporting.

The goal of IAS is the coordination of accounting standards to minimise as far as possible differences in national accounting systems, and to ensure comparability and reliability of information on this basis in order to make decisions by their users.

Economic differences and differences in the environment determine the variation between accounting systems (e.g. concerning their regulation), accounting evaluations and orientation of financial reports. Together these elements impact national standards and the reporting practice.

For Latvian businesses the disclosure of information is an important factor as the owners are willing to invest in business development. There are two types of companies in Latvia. The first group consists of companies that are aiming at gaining funds on the global financial markets and therefore they have started to implement IAS reporting. Another big group consists of local businesses, mainly small and medium size companies, that would like to apply national AS as before.

The International Accounting standards are used in Latvia as the international basis for working out national standards. The following aspects are the objective characteristics of IAS if compared to national accounting standards (Table 1).

Table 1

IAS Characteristics

IAS	AS
Generalise the best know-how and practices accumulated by the accountants from many countries.	Generalise knowledge and practice accumulated by Latvian accountants.
When developed, the IAS go through the stage of public discussion and the piloting phase.	Latvian standards are developed and approved by the Decision of the Accounting Council.
Standards are not tied to peculiarities regulating accounting in separate countries.	Standards are tied to peculiarities regulating accounting in Latvia.
Ensure compatibility of bookkeeping documentation among companies on the world scale, as well as serve as a precondition for the availability of reporting information for inside users.	Ensure compatibility of bookkeeping documentation among Latvian companies. Information is available to inside users and it is provided by the Enterprise Register.
Standards allow significantly reducing costs of the company on preparing consolidated reporting.	Consolidation of reporting is being prepared on the basis of the Law "On Consolidated Annual Reports".
Differ with the simplicity of acceptance for the users of financial information.	Standards are simply accepted by accountants.
Standards are being constantly improved.	Practice of implementing standards has not lasted for long (since 2004), therefore the issue of improving them is not valid yet.

However, the drawbacks of the IAS should also be mentioned. The following can be attributed to them:

- the generalised character of the standards that anticipates a fairly wide variety of accounting methods;
- lack of detailed instructions, explanations and examples to apply standards to specific situations;
- IAS orientation to developing market economy that makes difficult the application of standards to developing countries;
- the permissive character of IAS, their optional character that explicitly impedes the harmonisation process across the countries;
- IAS cannot be applied partly, i.e., accountancy shall correspond to every applied standard.

Latvian legislation on accounting allows the preparation of financial reports according to IAS. It is one of the simplest and most perspective ways of spreading the IAS [Gada pārskatu likums, 1992.].

The financial stability of the business subject, to a certain degree, also depends on the ability to bring profit in the required amount. Methodology of the analysis of financial results has undergone significant changes in Latvia right now. It is related to the departing from a narrow understanding of profit as difference between accounting revenue and expenses, and approaching to its economic understanding as raising own capital that corresponds to the modern concept of the maintenance of capital that has found its expression in both the International Accounting Standards and the Latvian Accounting Standards.

The financial analysis is targeted at management decisions the consequences of which will be seen in the near or distant future. The most important task of the financial analysis in the modern conditions is the prospective evaluation of the company financial situation and its financial stability in the future from the position of their correspondence to the company development goals in the changing micro and macro environment.

To reveal terms and opportunities for the company to gain profit, the analysis of financial results is performed. During this analysis answers to the following questions are received:

- How stable is the received revenue and the paid expenses?
- What elements of the report on revenues or expenses could be used for forecasting financial results?
- How productive are the incurred expenses?
- What is the effectiveness of investing capital in the given company?
- How effective is the company management?

First of all the information on profit and loss is used for the analysis of financial results. It is also important to note here that information basis for the analysis of financial results has undergone significant changes recently, concerning determining and recognising revenues, expenses, net profit and retained earnings. New approaches to the understanding of revenues and expenses are strengthened normatively by the Latvian Accounting Standard (LAS) No.5 "Long-term Agreements" and LAS No.6 "Revenues". In the profit and loss report four main sections characterising revenues and expenses respectively have been introduced:

- according to the conventional activities,
- operational,
- irrational,
- extraordinary.

The current grouping of the report makes it more analytical, and allows to evidently seeing the contribution of every entry in receiving the final financial result.

The final financial result is the net profit – the accounting profit after the deduction of compulsory payments with the correction taking into consideration the impact of extraordinary income and expenses on it, or the retained earnings. This approach is worked in the accounts plan of Latvian companies. Evaluation of the efficiency of the owner's equity depends on the calculation of the final financial results. First of all, it refers to the feasibility of the owner's equity. According to the approved concept of expenses, provided by LAS No.5 and No.6, many social expenses, for example costs of health insurance, payment for food and others that before were provided on the expense of profit, having been left at the disposal of the company, should be included into the actual cost (but not for the purposes of calculating the tax basis) [Zariņa V., 2004.]. This makes it possible to reliably characterise the real relationship between the revenues and expenses of the company. As a result the net profit figure really is the final result, which only the owners have the right to handle.

Experience shows that those who prepare accounting reports and users of these reports often err concerning the intended profit figures from regular activities and extraordinary income and costs. Separating extraordinary income and costs in a separate group is often linked with the requirements of tax-bookkeeping. This err leads to problems with relationships between the company and the taxation institutions when determining the taxation basis.

Inside analysis of financial results is held by stages. First, the impact of the accounting principles concerning evaluation of assets, revenues and expenses, and functioning on the company are evaluated. Facts for the changes in the reporting policy and its influence on the results of the analysis are displayed. Then reasons for the changes of the final financial results, stable and circumstantial factors that have influence on their change are analysed. Finally, deeper analysis of financial results applying the figures of the managerial accounting is performed [Панков Д., 2003.].

Diversified companies or companies that sell on the markets in different countries of the EU and in the third countries evaluate the information about revenues and expenses cross-sectionally on separate product types and business segments. To evaluate risks of their activity, revenues and expenses, and financial results in every segment are analysed separately.

When analysing the company profitability, most attention is paid to the dynamics of feasibility figures of owners' equity and its determining factors. Similarly attention is paid to the reasons why feasibility of the invested capital changes, to the importance of the profitability figures characterising efficiency of production costs.

The analysis of the financial reporting is an integral part of most decisions concerning crediting and investment in Latvia. When making a decision on giving a loan, the creditor considers the borrowing organisation mainly concerning the potential return of the loan and reward he/she will receive in the form of interest. Therefore, the analysis of financial reporting plays an important role for the creditor in the entire decision making process.

To make a decision whether the company needs a loan or not the business studies in detail and analyses financial reporting for the reporting period. When making a decision about investing in owners' equity, the increase in the capital value and size of the dividend is considered. Long-term profitability and dividends depend on the growth of business activity and on the liquidity elements that are evaluated with the analysis of financial reporting.

Another part of expected return as if comes from other investors who will possibly want to pay for investment in the capital in the future more than the current investor has.

The analysis is aimed at evaluating risks, revealing narrow escapes and potential problems. The riskiest business activity is the one that legal and natural entities take on independently at their own expense and at their own risk, which very actively is developing in Latvia due to the transition to the market economy. Along with the increasing burden of commercial and production activity, the risk of appearance of not anticipated material and financial losses grows, as well as losses during entrepreneurial activity and deals of different kind.

The analysis of financial reporting is drawn up in a form of an explanatory note of the company management. It contains the following sections:

- general data on the company under the analysis; branches, part of which it is; economic environment in which it operates;
- financial and other data used for the analysis, coefficients and other analytical indicators;
- showing and evaluation of favourable and unfavourable qualitative and quantitative factors that affect the most significant parts of analysis;
- evaluations and conclusions based on the results of the analysis, as well as forecasts.

In the system of management report, the information about the places where losses occur, about the reasons for deviation of actual losses from the planned ones (rationed losses) is formed. To organise business activity effectively, farms in Latvia provide accounts of losses. It gives the opportunity not only to analyse the existing state across the technical and economic factors but also to make financial plans for the future periods. Financial reporting is a significant part of accounting because it is related to the regulating the cash flow from business activity and with ensuring the solvency of a farm. One of the preconditions of the effective work of a farm is precise and all-inclusive planning and analysis of business activity. Reporting of actual expenses occurs when the data are compared to the planned ones. Final financial results depend on the volume of produced and sold products. On the basis of the financial reporting a farm fulfils a consolidated reporting of operational results. Analysis of the financial plan allows determining corrections more precisely on the introduced technology, taking into consideration norms of expenses and the valuation. In such a way normative expenses are represented as average expenses from the calculation of actual and imposed production costs. In practice farms are learning to forecast correctly changes in expenses and are paying big attention to calculating the prime cost of one product unit.

The organisation of accounting of farms in Latvia is ensured by the Agriculture Consultation Centre (ACC). The Centre has its branches (offices) in every administrative district of the country. The task of the ACC in the area of management reporting is to disseminate best practices in organising it, as well as to promote experience in using it in farm managing.

In the development of the bookkeeping system the LAS and IAS are followed in Latvia. The work of accountancy is organised establishing the accounting department as an independent department or outsourcing an accounting company according to the signed agreements. In the operation of the accounting

system in the country general economy statements are followed, the ones adopted by the European Union, including directives and regulations that determine the role of accounting in economy.

Conclusions

1. Having studied the development and changes in the accounting system in Latvia, it is possible to distinguish between two stages:
 - reporting reform after Latvia regained its independence (1990-2001);
 - integration of the Latvian system into the European one (from 2002).The Danish system was chosen as the basis of the concept in Latvia. The first legislative acts on accounting were approved by the Supreme Soviet of Latvia on October 14, 1992: the law "On Accounting" and the law "On Company Annual Reports".
2. To ensure an independent audit, an essential reform was carried out in the entrepreneurial activity, taxation policy and accounting and control.
3. On the basis of the fourth 93/22/ECC and the sixth 89/29B/EEC Directives, the movement of harmonisations of European accounting systems began. Provisions of the directives were included into the national legislations.
4. In Latvia the development of national accounting standards, based on the IAS, has started.
5. The analysis of financial reporting is an integral part of most decisions concerning crediting and investing in companies in Latvia.
6. In the operation of the accounting system in the country the general economy statements are followed, the ones that are adopted in the European Union, including also directives and regulations that determine the role of accounting in economy.

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Kopsavilkums

Pētāmā problēma ietver grāmatvedības galvenās uzdevumus, to īpatnības un tā pareizu pielietojamību uzņēmumu un fizisko personu saimnieciskās darbību lielumu pareizas informācijas uzskaitē, analīzes sistēmā, pašizmaksas kalkulācijās aprēķināšanā, plānošanā un kontrolē, kas virzīta uz lēmumu pieņemšanu ar mērķi nodrošināt kvalitatīvu uzņēmējdarbības vadības funkciju pildīšanu, un tautsaimniecības pacēlumu Latvijā. Šajā rakstā ir apskatīta Latvijas grāmatvedības sistēmas attīstība. Grāmatvedības sistēmas attīstība tika analizēta, ņemot vērā sekojošus vēsturiskos periodus: 1) grāmatvedības reorganizācija pēc Latvijas neatkarības atjaunošanas (1990.-2001. g.); 2) Eiropas grāmatvedības sistēmas integrācijas periodā (kopš 2002. g.). Šī raksta uzdevums ir analizēt Latvijas grāmatvedības sistēmu, ņemot vērā galvenos sasniegumus grāmatvedības teorijas un prakses attīstībā. Ir parādīts, ka diviem vēsturiskiem periodiem ir izšķirošā loma Latvijas grāmatvedības attīstībā. Raksta pamatā ir to normatīvo dokumentu analīze, kuri būtiski ietekmē Latvijas grāmatvedības sistēmu.

Factoring Market in the World and Europe

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Abstract. Factoring is one of the oldest methods of business financing in existence. The history of factoring dates back to the days of moneylenders in the middle ages. It has taken on a new life in recent years as a financing method for many businesses in the world. The paper explores historical and theoretical development of factoring with a particular emphasis laid on the dynamics of factoring in the world, since the aim of the research is to study factoring market on the basis of factoring volume. The research shows that the world factoring volume has grown at a rate of 81.82% over the period of previous 7 years. The largest increase is shown by Australia and New Zealand; however their share in the world factoring market equals only to 2.4% and 0.2% respectively. The study concludes that enormous volume differences exist between the member states, with, for example, the UK market being around 47 times bigger than Greece market, and considerably larger than the markets in Cyprus, Switzerland, Hungary, Poland and Denmark. The research is mainly based on the monographic descriptive method, as well as the methods of analysis and synthesis.

Key words: Factoring, resource, non-resource, volume

Introduction

In latest years factoring has experienced phenomenal growth and has become an important source of financing; especially short-term working capital, for small and medium-size enterprises and corporations, reaching a worldwide volume of 1.134 billion euro in 2006 (Bakker et al, 2006). Although the importance of factoring varies considerably around the world, it occurs in most countries and is growing especially quickly in many developing countries. There are several scientific studies done on factoring (Bakker, Udell et al, 2006; Klapper, 2006; Soufani, 2002; **Cox and Mackenzie, 1986**; Rutberg, 1994; Papadimitriou, Phillips and Wray, 1994, etc.) **in the world; however** there are quite few studies on factoring in Latvia (Leja, 2002), the majority of publications fall under the category of newspaper and magazine articles (Hartmanis, 2004, Kronberga, 2006; Apsīte, 2006; Kļavis, 2006; Rebits, 2001; Līcītis, 1999, etc.), besides they have looked upon the problem from different aspects, mainly theoretical, legal and accounting. The present study focuses on historical and theoretical development of factoring with a particular emphasis laid on the dynamics of factoring in the world. The aim of the research is to study factoring market in the world on the basis of factoring volume. The following tasks are advanced to achieve the set aim:

- 1) to give a survey on historical development of factoring;
- 2) to study the essence and process of factoring;
- 3) to analyse the volume of factoring market in the world.

The information compiled by the Factoring Chain International, internet resources, different working papers, scientific publications and other materials have been used for the purpose of the study.

The research is mainly based on the monographic descriptive method, as well as the methods of analysis and synthesis are used to study the problem elements and synthesize coherencies or formulate regularities.

Results and discussion

1. Historical development of factoring in the world

Factoring is one of the oldest forms of commercial finance. Some scholars (Rutberg, 1994) trace its origins to the Roman Empire, while some scientists (Papadimitriou, Phillips, and Wray, 1994) date it back 4000 years to the days of Hammurabi, who was the king of Mesopotamia and gets credit as the "cradle of civilization."

The first widespread, documented use of factoring occurred in the American colonies before the revolution. During this time, cotton, furs and timber were shipped from the colonies. Merchant bankers in London and other parts of Europe advanced funds to the colonists for these raw materials, before they

reached the continent. This enabled the colonists to continue to harvest their new land, free from the burden of waiting to be paid by their European customers. However these were not banking relationships as they exist today. If the colonists had been forced to use modern banking services in the 18th century England, the process would have been much slower. The banks would have waited to collect from the European buyers of the raw materials before paying the seller of these goods, the colonists. This was not practical for anyone involved. So, just as today, the "factors" of colonial times made advances against the accounts receivable of clients, enabling the clients to continue with their operations, long before they had been paid for what they were sold (NYC Factoring Cash Flow Company, 2008).

With the advent of the Industrial Revolution, factoring became more focused on the issue of credit, although the basic premise remained the same. By assisting clients in determining the creditworthiness of their customers and setting credit limits, factors could actually guarantee payment for approved customers. This is known as factoring without resource (or non-resource factoring) and is quite common in business today (NYC Factoring Cash Flow Company, 2008).

Factoring was also a well-developed activity in England in the 14th century, where it evolved with the growth of the wool industry. The job of factors focused on their functions as sales agents or commission merchants for textile mills. The distances between customers and manufacturers made commerce problematic due to the quite primitive forms of transportation and communication, therefore factors assumed complementary functions to address the business challenges that arose because of these issues. At the centre of these functions was the factors' role as the sales force for the textile mills. Factors also assumed some critical financial functions on behalf of the mills. They offered credit advice on how much to sell on account to potential customers. They also guaranteed payments to the mills, assuming full responsibility for the creditworthiness of the mills' customers. To protect themselves, factors established reserves to cover claims for defective merchandise and any disputes that arose out of those claims. Finally, and equally important from an historical perspective, factors advanced funding to the mills based on the value of the merchandise sold (Bakker et al, 2006).

Prior to the 1930's, factoring in this country occurred primarily in the textile and garment industries, as the industries were direct descendants of the colonial economy that used factoring so specifically. After the war years, factors saw the potential to bring factoring to other forms of invoice-based business and the expansion began. Many of these private factors sprung up in record numbers as interest rates rose to new heights in the 1960's and 1970's. This trend intensified in the 1980's, primarily due to the increasing impact of interest rates and changes in the banking industry. With banks becoming too expensive and too inflexible due to heavy regulation, the small businessperson was forced to find other sources of financing for expansion and growth. As more and more banks stop befriending the small business person, factoring is becoming an increasingly popular option (NYC Factoring Cash Flow Company, 2008).

Thus, in essence, factoring was fully reflected economically in the financial component of the factoring business as it existed 600 years ago. The difference between today and 600 years ago is that the sales, or "agenting," component has been purged from the factoring relationship. Today, factors exist in all shapes and sizes: as divisions of large financial institutions or, in larger numbers, as individually owned and operated entrepreneurial endeavours.

The history of factoring in Latvia is relatively short. In 1994 a credit line against untraditional collateral – accounts receivable, which are the asset-based finance and basis of factoring – was offered. In 1994 Latvian Association of Lessors was established; however practically factoring services in Latvia were introduced only in 1997, when such companies as "Hansa Līzings, "Parex Banka" and "Tallinn Pank Leasing Latvia" started their operation. Currently almost all the largest and famous credit institutions or their affiliates, or even leasing companies offer factoring services.

2. Essence and process of factoring

The term factor comes from the Latin verb *facio*, which means "he who does things." As the Latin verb suggests, the history of factoring is the history of agents doing things for others. Linguistically the term "factoring" has developed from the English word "factor" which in the United Kingdom and the United States of America designates an intermediary, a trade agent, or a middleman who represents a company situated in another (usually distant) location (Leja, 2002).

Factoring is risky, but highly profitable kind of crediting, effective instrument of financial marketing, one of the forms of integration of bank operations, which are most adapted to modern processes of development of world economy. Originally factoring had arisen as operation of the specialized trade intermediaries, and later it joined trade banks. It was caused by amplification of inflationary processes and instability in economy of a number of the countries during this period that required faster realization of production, i.e., acceleration of translation of the capital from the commodity form in money. Widely used the bill form of accounts not always guarantees timeliness of reception of means and compensation of the valid expenses on production. Therefore problem of debts for the suppliers has got paramount meaning (Factoring essentials, 2008).

Factoring is a loan for financing the working capital of an enterprise or a financial institution, whereby the factoring company acquires accounts receivable (claims) of such enterprise or financial institution by taking over the enterprise's or financial institution's right of claim on receivers of goods or services and assuming credit risk. Factoring as the service is most effective for the small and medium size enterprises, which traditionally experience financial difficulties because of delayed repayment of duties and limitation of sources, accessible to them, of crediting. Financial institutions, which give factoring of service refer to as the factor as firms. They are created by the largest banks (or banks carry out functions the factor of firms), that provides high reliability factoring of the bargains and minimal costs for the clients.

Usually three persons participate in operation factoring: the factor - buyer of the requirement, initial creditor and debtor who has received from the client the goods with a delay of payment. The operation factoring consists that factoring the department of bank buys the debt requirements (account of the invoice) client on conditions of an immediate reimbursement up to 80% of costs of deliveries and payment of other part, minus percent for the credit and commission payments. If the debtor does not pay in time account factoring, factoring department carries out payments instead of it.

In the world factoring operations are regulated by UNIDROIT Convention on International Factoring adopted on May 28, 1988 in Ottawa. The Convention governs factoring contracts and assignments of receivables and applies whenever the receivables assigned pursuant to a factoring contract arise from a contract of sale of goods between a supplier and a debtor whose places of business are in different states and a) those states and the state in which the factor has its place of business are contracting states; or b) both the contract of sale of goods and the factoring contract are governed by the law of a contracting state (UNIDROIT, 1988).

There are several types of factoring, of which the most common ones are:

- resource factoring;
- non-resource factoring;
- invoice discounting.

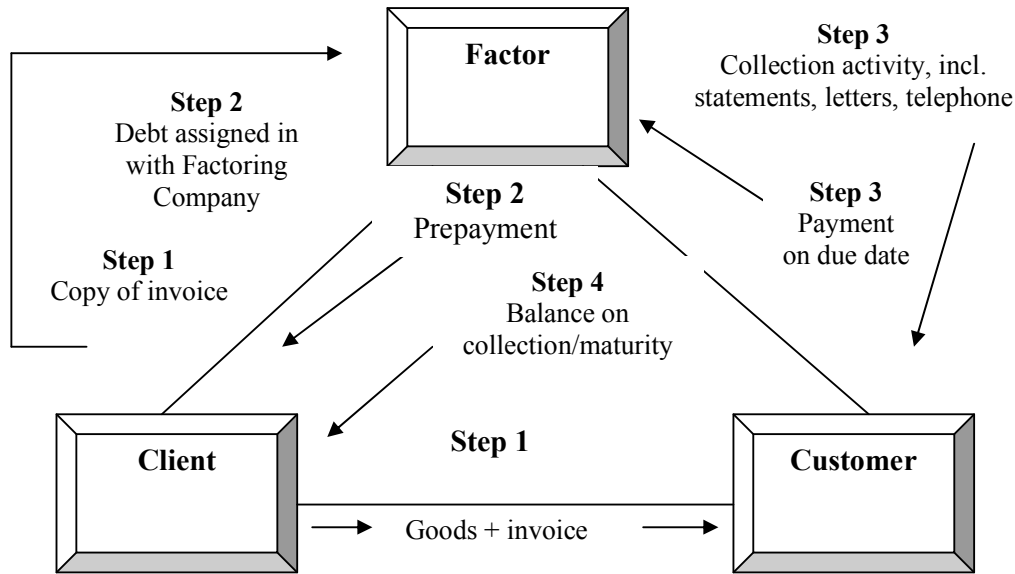
Recourse factoring involves a factor taking responsibility for their clients' debt collections but retains the right to seek full recourse from the client for any bad debts. The client may buy credit insurance separately but no cover is provided by the factor.

Non-recourse factoring offers the client full credit management service cover on approved debts against the eventuality of the factor being unable to secure full payment of factored invoices. In the case of recourse and non-recourse factoring, the involvement of the factor is normally disclosed to the customer. However, most **invoice discounting** agreements are managed on a "confidential" basis, where the customer is unaware of the involvement of the factor.

The process of invoice discounting is almost exactly the resource or non-resource factoring. Yet, as a "confidential" service, under invoice discounting the client chases payment from the customer directly where this payment is made to a nominated trust account held under control by the factor.

Invoice discounting is much more about access to finance, rather than factoring, which is more about access to finance with professional services. This is reflected in the typical size of clients that are suitable for each service – with invoice discounting more appropriate to medium and larger clients with resources enough to run a professional credit management function, and factoring, conversely, more appropriate to smaller firms (Analysis of Use of Factoring, 2002).

Figure 2 highlights the process of a resource and non-resource factoring.



Source: Analysis of Use of Factoring, 2002

Figure 1. The process of resource and non-resource factoring

Steps undertaken at the process of factoring are as follows:

1. The client ships goods with original invoice to the customer. This invoice would normally instruct the customer to pay the factor (giving full payment details). At the same time, the client sends a copy of the original invoice to the factor.
2. On receipt of the copy invoice by the factor the associated debt is assigned to the factor in accordance with the factoring agreement. Simultaneously, the factor makes available a credit line (normally of up to 80% of the invoice value) against which the client can choose to immediately draw down a pre-payment (factors usually provide finance within one day of receiving the client invoice).
3. The customer pays the full invoice balance directly to the factor on the due date. In case of overdue payment against an “unchallenged” invoice, the factor initiates the process of credit collection from the customer. In the case of continued non-payment, it is normally the factor who proceeds with legal action and foreclosure against the customer. In case of recourse factoring, the factor has recourse to the client for any outstanding uncollected debt. Conversely, under non-recourse factoring the factor assumes any loss (in some cases such loss may be protected through credit insurance held by the factor).
4. On payment by the customer (or in case of late payment on an agreed date) of the full invoice amount, the factor credits the balance (less the prepayment and fees) to the client account. The factoring agreement with the client is, in almost all cases, on a whole turnover basis (rather than individual invoices), and as such, the factoring process is perpetual. This is an important point and means that factoring involves the client selling its entire “sales ledger” to the factor (Analysis of Use of Factoring, 2002).

The process of factoring certainly comprises several advantages and disadvantages to be looked upon. Factoring as a service is advantageous in several ways:

- *speed* – factoring and invoice discounting allow to capitalise on the company’s invoices with a minimum of delay;

- *cost* – factoring the company’s invoices is cheaper than using credit cards, overdrafts and many other forms of finance;
- *time saving* – rather than having to chase debts, factoring usually means the invoice finance company will collect the money themselves;
- *security* – factoring does not require the company to risk its home or business assets as security on the finance, as the money is secured on the sales already made;
- *suitable for businesses of all sizes.*

Factoring has also some disadvantages:

- relatively *expensive* method of financing;
- comparatively *bureaucratic* process;
- *reputation* – some less reputable invoice finance companies can damage customer relations by being too aggressive in collecting factored invoices;
- *control* – factoring reduces the control the company has on its debts, as the invoice finance company collects them for the company.

Factoring is a rather new effective system of improvement and reduction of financial risk at the company of payments. The commercial banks, developing these operations, supplement by their elements of accounting, information, advertising, marketing, legal, insurance and other service of the clients. It allows expanding a circle of the clients of bank, to strengthen communication with them, to increase profit of bank at the expense of expansion of operations.

Factoring market in the world and Europe

On a worldwide scale, almost a thousand companies currently offer factoring services, of which 435 are in Europe. The factors, namely the companies operating in this market, are usually subsidiaries of banking groups, financial institutions, insurance companies or manufacturing firms, and rarely independent companies (Factors Chain International, 2008).

The current internationalisation of the market is reflected in a growing trend towards buyouts and mergers in a sector still dominated by essentially national agents. The diverse nature and current demands of businesses that use factoring are currently contributing to the emergence of new services and ever-increasing incorporation of new technologies.

Table 1

Total world factoring volume by continents in the last 7 years (in millions of EUR)

Continents	2000	2001	2002	2003	2004	2005	2006	Percent change 2000 - 2006
Europe	414.38	468.33	522.85	546.94	612.50	715.48	806.98	94.74
America	126.52	127.16	115.30	104.54	110.09	135.63	140.94	11.40
Africa	5.66	5.80	6.20	5.84	7.59	6.24	8.51	50.35
Asia	69.87	76.08	69.85	89.10	111.61	135.81	149.99	114.67
Australia	7.32	7.91	9.53	13.72	18.18	23.13	27.57	276.64
New Zealand	100	410	465	263	236	250	280	180
Total world	623.84	685.68	724.20	760.39	860.22	1.016.55	1.134.29	81.82

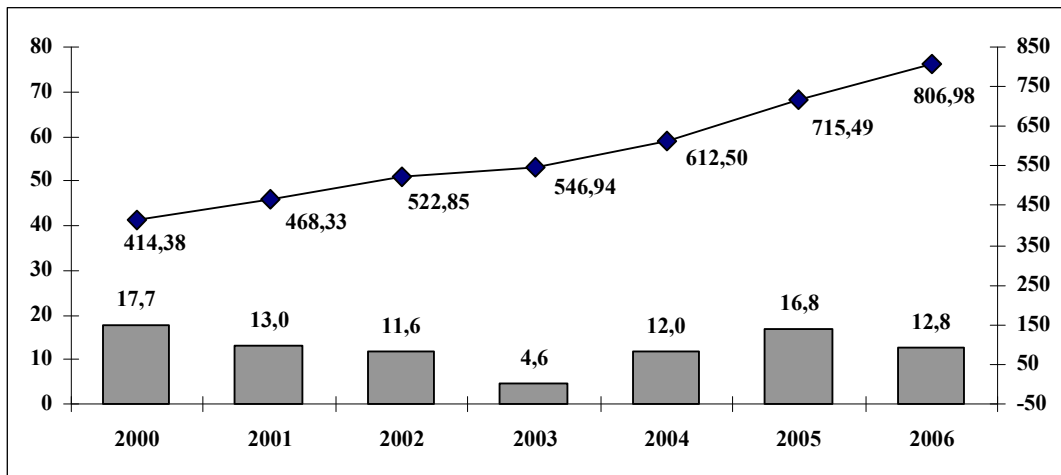
Source: Factors Chain International (2000-2006)

Factors Chain International is a global network of leading factoring companies, whose common aim is to facilitate international trade through factoring and related financial services. It was established in 1968 as the umbrella organisation for independent factoring companies around the world, and currently the Factors

Chain International network counts 232 factors in 63 countries, actively engaged in more than half of the world's cross-border factoring volume.

The world factoring volume has grown at a rate of 81.82% over the period. The largest increase is shown by Australia (276%) and New Zealand (180%); however their share in the world factoring market equals only to 2.4% and 0.2% respectively. Africa is the second smallest world factoring market covering 0.75% of the world factoring volume.

Overall the performance of the global factoring market increased slightly compared to 2005, with a growth rate of +11.6% in 2006 (Figure 2).



Source: Factors Chain International (2000-2006)

Figure 2. Factoring volume in the European market for the period 2000-2006, millions of EUR

In 2006 the European market continued its double-digit growth at a rate of +12.79% (+11.58% for the world as a whole) and now represents 71.14% of global volume.

Table 2 presents data on aggregated factoring volumes for each European country over a seven years period, and considers the respective rates of growth in factoring volume over the period. There are clearly enormous volume differences between member states, with, for example, the UK market being around 47 times bigger than Greece market, and considerably larger than the markets in Cyprus, Switzerland, Hungary, Poland and Denmark. France as the third largest market is still only around 40% of market size in the UK.

The following conclusions may be drawn based on the figures of Table 2:

- the UK (EUR 248 billion) is by far the largest market and is continuing its strong growth;
- after three years of recession, Italy (EUR 120 billion) has returned to growth: +8.3%;
- France (€100 billion) will soon move into the second position, with respectable growth of 12.35%;
- Germany (EUR 72 billion) is continuing its strong growth (+30.65% or 2 times in three years), and still has substantial potential on the basis of its low penetration rate (3.1%);
- Latvia (EUR 276 million) has grown enormously – 13.8 times.

Table 2

Aggregate Factoring Volumes 2000-2006 (in millions of EUR)

Country	2000	2001	2002	2003	2004	2005	2006	Percent change 2005 - 2006
Austria	2.275	2.181	2.275	2.932	3.692	4.273	4.733	10.76
Belgium	8.000	9.000	9.391	11.500	13.500	14.000	16.700	19.29
Bulgaria	1	2	0	0	0	0	35	n/a
Croatia	0	0	0	0	28	175	340	94.29
Cyprus	1.410	1.554	1.997	2.035	2.140	2.425	2.546	4.99
Czech Republic	1.005	1.230	1.681	1.880	2.620	2.885	4.025	39.51
Denmark	4.050	5.488	5.200	5.570	6.780	7.775	7.685	-1.16
Estonia	615	1.400	2.143	2.262	3.920	2.400	2.900	20.83
Finland	7.130	7.445	9.067	8.810	9.167	10.470	11.100	6.02
France	52.450	67.660	67.398	73.200	81.600	89.020	100.009	12.35
Germany	23.483	29.373	30.156	35.082	45.000	55.110	72.000	30.65
Greece	1.500	2.050	2.694	3.680	4.430	4.510	5.230	15.96
Hungary	344	546	580	1.142	1.375	1.820	2.880	58.24
Iceland	125	26	16	25	16	15	25	66.67
Ireland	6.500	7.813	8.620	8.850	13.150	23.180	29.693	28.10
Italy	110.000	124.823	134.804	132.510	121.000	111.175	120.435	8.33
Latvia	0	Shown with Estonia until 2003			155	20	276	1280
Lithuania	0	Shown with Estonia until 2003			1.040	1.640	1.896	15.60
Luxembourg	0	0	197	257	285	280	306	9.29
Malta	0	0	0	0	0	0	1	n/a
Netherlands	15.900	17.800	20.120	17.500	19.600	23.300	25.500	9.44
Norway	4.960	5.700	7.030	7.625	8.620	9.615	11.465	19.24
Poland	2.085	3.330	2.500	2.580	3.540	3.700	4.425	19.59
Portugal	8.995	10.189	11.343	12.181	14.700	16.965	16.886	-0.47
Romania	60	98	141	225	420	550	750	36.36
Russia	0	0	168	485	1.130	2.540	8.555	236.81
Serbia	0	0	0	0	0	0	150	n/a
Slovakia	160	240	240	384	665	830	1.311	57.95
Slovenia	65	71	75	170	185	230	340	47.83
Spain	19.500	23.600	31.567	37.486	45.376	55.515	66.772	20.28
Sweden	12.310	5,250	10,229	10,950	14,500	19,800	21,700	9.60
Switzerland	1.300	1.430	2.250	1.514	1.400	1.900	2.000	5.26
Turkey	6.390	3.947	4.263	5.330	7.950	11.830	14.925	26.16
Ukraine	0	0	0	0	0	333	620	86.19
United Kingdom	123.770	136.080	156.706	160.770	184.520	237.205	248.769	4.88
Total Europe	414.383	468.326	522.851	546.935	612.504	715.486	806.983	12.79

Source: Factors Chain International (2000-2006)

Importantly, almost all countries demonstrate positive, and in many cases highly positive, rates of growth in total factoring volumes over the period 2000-2006.

The mean average rate of growth measuring 32.87% over the last period – albeit with many increases building from relatively low bases. The largest market, the UK, demonstrates the rate of growth of approximately 100% over the period.

Conclusions

1. Around the world factoring is a growing source of external financing both for large corporations and small and medium size companies. Factoring is risky, but highly profitable kind of crediting, effective instrument of financial marketing, one of the forms of integration of bank operations, which are most adapted to modern processes of development of the world economy.
2. Factoring as the service is most effective for the small and medium size enterprises, which traditionally experience financial difficulties, because of delayed repayment of duties and limitation of sources, accessible to them, of crediting.
3. Factoring advantages include the following aspects – speed, cost, time saving, security and suitability for businesses of all sizes; as the main disadvantages – expensiveness, reputation and loss of control are mentioned most often.
4. The world factoring volume has grown at a rate of 81.82% over the period. The largest increase is shown by Australia (276%) and New Zealand (180%); however their share in the world factoring market equals only to 2.4% and 0.2% respectively. Africa is the second smallest world factoring market covering 0.75% of the world factoring volume.
5. There are clearly enormous volume differences between member states, with, for example, the UK market being around 47 times bigger than Greece market, and considerably larger than the markets in Cyprus, Switzerland, Hungary, Poland and Denmark. France as the third largest market is still only around 40% of market size in the UK.

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Influence of Public Funds on the Development of Arable Farms on the Territory of the West Pomeranian Voivodeship

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Abstract

The major aim of the work is the definition of the influence of public funds on the development of arable farms, and the indication of a special layout of economically strong farms, which are competitive on the market. The research has been conducted in the years 2006 – 2007 and concerns the first period of the Polish membership in the European Union, which is identical with the first budgeting period. The research covered 650 owners of arable farms (6.5% of farms from the West Pomeranian voivodeship).

Keywords: farm development, public funds, integration, the EU

Introduction

The undertaken research topic concerns the financial aspects of the development of agricultural regions in the initial stage of the Polish membership in the EU. This is a complex problem, which requires the acknowledgement of various factors: economic, special, social and institutional-legal factors. The basic research purpose is the evaluation of the capability of arable farms to absorb public financial means, both in the form of direct support and investment support.

The problem of the modernization of agricultural regions and agriculture is not a new problem. Until the present day, a series of publications have been released, which raise the question of the strategies of arable farms and rural regions development (Michna W., 1999; Woś A., 1998; Hunek T., 2000). The crucial aspects of the agricultural sector transformation are: the so-called bipolar polarization (the progress and modernization of agriculture is based on changes in the agrarian structure of the farms), natural evolution (the motive power for the development of agriculture is an internal mechanism of structural changes of farms in result of generation change) and the strategy of controlled changes (successful modernization of agricultural regions is possible with an active support from the country for arable farms) (Woś A., 1999). Much attention is devoted to the development of extra-agricultural economic activity in agricultural regions. In the current debate, much significance is assigned to particular actions, nevertheless particular authors agree with one point, that the development is not possible without the support from the country.

The aim of the work

The main aim of the research is the definition of the influence of public funds (which incorporate the European Union funds as part of the conducted WPR and the country funds, which are a supplement to the Union funds), which are granted on the basis of the European Rural Development and the Sector Operational Programme – Agriculture for the development of arable farms, and the indication of a special layout of economically strong farms, which are competitive on the market.

Methods of research

The research has been conducted in the years 2006 – 2007 and concerns the first period of the Polish membership in the European Union, which is identical with the first budgeting period.

The communities of the West Pomeranian Voivodeship have been chosen for the research on purpose. The choice of communities acknowledged the varied conditions of the functioning of arable farms on the evaluated area due to the functional – special arrangement of the voivodeship, which encompasses the division into three belts: the seaside belt, the borderline belt, and the neo-agricultural belt (this division stems from the Strategy of Development of the West Pomeranian Voivodeship to the year 2020).

In each of the communities, a group of arable farms, which are included into the so-called semi-subsistence group, have been chosen in a random manner. The research covered 650 owners of arable farms. The research embraced both the farms, which use the support of the country in the form of financing agricultural regions, and those which are not the country's beneficiaries (an exception may include direct funds).

In general, the territory of the West Pomeranian voivodeship in the end of 2005 located 71220 arable farms, out of which 41 thousand were farms of the area of 1 hectare. On the territory of the examined communities, 10 thousand arable farms have been registered. As a result of the conducted research, 0.9% of arable farms from the territory of the voivodeship have been surveyed, whereas the research trial from the region amounted to 6.5%.

The acquired results have been compiled statistically, performing an analysis of variances (ANOVA), the Kruskal-Wallis rank analysis, the correlation of gamma ranks and the Chi – square test. In the rank analysis, two types of tests have been used: the Kruskal – Wallis rank analysis and the correlation of gamma ranks (the equivalent of the parametrical index of correlation of the Pearson ratio momentum).

Research results

One of the basic parameters defined in the research of a socio – economic character is the age of the respondents. This stems from the fact, that in many cases (especially in the agricultural regions), the age of the farm owners determines a range of decisions connected with the activity conducted by them. On the territories covered by the research, the average age of the respondents equalled to 43 years, with the scope from 19, up to 81 years. Considering the age of the respondents in particular age groups, it has been indicated, that the largest group was a group of farmers in the age from 40 to 44, which makes nearly 16% of the researched whole. However, it should be emphasized, that over 37% of the respondents were owners of arable farms up to 40.

The second most often defined parameter is the education level. As is shown by the conducted research, the dominating group was the respondents with an agricultural vocational education (21.1%) and with extra-agricultural education (22.5%). However, a fact should be emphasized, which states, that, in comparison with the above mentioned data for the examined areas, a considerably small percentage of interviewees with primary education (about 16%), and twice higher than the country average percentage of interviewees with higher education (9.1%).

The third and the most often defined parameter which has noticeable impact on the activity is the size of the farm. The average area of the examined farms is 29.4 hectare (which exceeds several times the average for Poland), with a very high scope from nearly 0.4 ha to 650 ha. In average, the biggest farms occurred in the seaside belt – 31.4 ha, and the smallest in the border part of the voivodeship – 29.4 ha.

The perspective of integration with the EU increased the investment needs in agriculture. The endeavours to enhance the effectiveness of the Polish farms stemmed from the need to prepare them for the conditions of competition on a Single Market. The economic situation of a considerable part of Polish arable farms does not, however, allow them to collect a capital necessary for conducting investments, necessary to enhance the quality of production and to adjust it to the market requirements (SAPARD 2003). The challenges, which have been imposed on the village and the agriculture in Poland in relation to the integration with the European Union were associated with the necessity to undergo changes of the agrarian structure, the social and the professional transformations of the inhabitants of agricultural areas, in the structure of the production wealth, production structure, institutions, and village organizations, etc. Further on, it was necessary to improve the effectiveness of management in agriculture and an increase in the competitiveness on international markets (Duczowska-Małysz K., 2001).

Górecki claims that from the very beginning of the integration process, it has been accepted, that the created community of countries should not be a club of the chosen ones, but an organization open for countries, which want to cooperate and, acknowledging the common values, aim at providing security, economic and social development, and the protection of values, rights and interest of the citizens (Górecki J., 2002).

In order to support the implementation of the priority tasks in the period of preparing for the membership, the European Union from the year 2000 has provided financial means for the countries applying for membership within three specially prepared programmes: Phare, ISPA and SAPARD.

The highest importance for the modernization of agriculture and for the development of agricultural areas lay on the SAPARD programme. Its main goal was to enable the adjustment of the agricultural sector that is a fluent introduction of agriculture into the Single Market system, and the village into a system of regional structural politics so, that Poland may use the instruments of the Common Agricultural and Structural Policy of the EU (Duczowska-Małysz K., 2001).

What is indicated by the data collected in the table, nearly 43% of the researched respondents used the above mentioned possibility of gaining financial means, and invested them in their arable farms. The basic investments included above all the purchase of machines and devices for agricultural production (27.5%) and the purchase of additional ground (7.1%) (Table 1).

Table 1

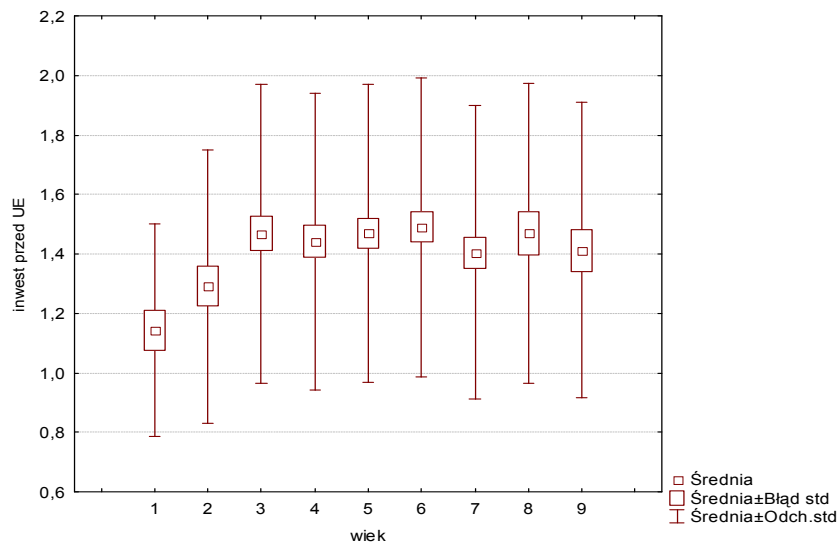
Investments in respondents' farms before entering the European Union

Specification	neo-agricultural belt		borderline belt		seaside belt		Total	
	n	% resp	n	% resp	n	% resp	n	% resp
yes	112	42.6	92	35.8	75	57.7	279	42.9
no	151	57.4	165	64.2	55	42.3	371	57.1
Total	263	100	257	100	130	100	650	100
machinery and tools	71	27.0	48	18.7	60	46.2	179	27.5
buildings	20	7.6	21	8.2	33	25.4	74	11.4
land	23	8.7	20	7.8	3	2.3	46	7.1
animals	6	2.3	0	0.0	0	0.0	6	0.9

Source: The author's research

The Chi-square test pointed to crucial differences in the investments performed by the respondents before Poland entered the European Union between the seaside belt, the internal belt and the borderline belt. On the first area, a more numerous group of respondents invested in their arable farms, than in the remaining areas. The differences equalled properly to 15.1% and 21.9% (Table 1).

As shown by the conducted rank variation analysis, the age of the respondents influenced considerably their investment decisions. The data provided in Figure 1 indicate that the respondents from nearly all age groups invested in their arable farms on a similar level. An exception includes only owners of arable farms from the two youngest age groups – up to 24 and from 25 to 28.



Source: The author's research

Figure 1. The relation between the age of the respondents and the investments in arable farms

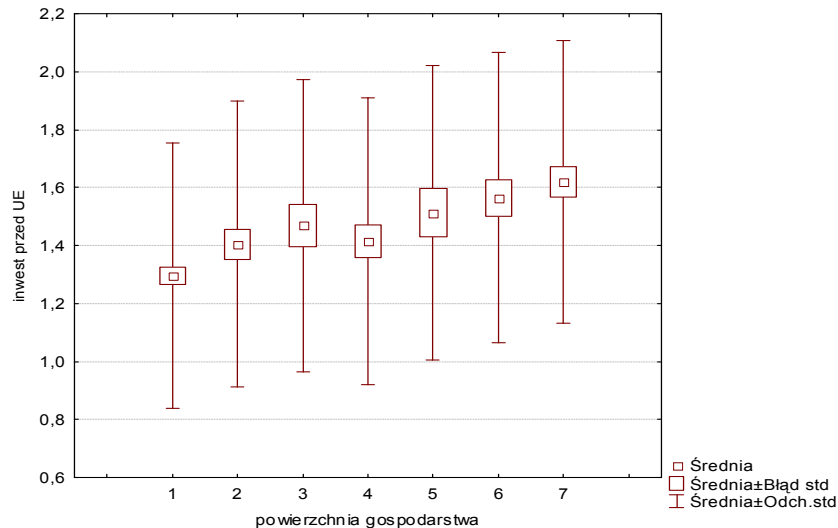
1- to 24 years, 2 - 25-28, 3 - 29-34, 4 - 35-39, 5 - 40-44, 6 - 45-49, 7 - 50-54, 8 - 55-59, 9 – above 59 years

The next rank variation analysis pointed that it was also the education factor, which influenced noticeably the investments performed by them. The analysis proved that a rise in the level of education was followed by increased inclination of the farmers to invest financial means in their farms, with the exception of the surveyed farmers with extra-agricultural education.

The acquired results are confirmed by the CBOS research from 2001. They indicated that the social position of a respondent influences the opinions born on the matter of the Polish integration with the

European Union. The more educated were the respondents, the better they evaluated their financial conditions – and the more often declared their support for the integration process, and what follows, the more eager they were to invest in their farms (Badanie – Aktualne problemy 2001).

Another factor influencing considerably on the decision-making process of the farmers and concerning the issue of investing before the accession to the European Union was the size of the farm. As may be expected, most often the farms were invested in by owners of the objects of the biggest size (Figure 2). In this case, one may surely risk the statement that irrespective of the financial means gained from the European Union support programmes, the owners of the biggest farms would invest in agricultural production anyway.



Source: The author's research

Figure 2. The relation between the size of respondents' farms and the investments in arable farms
1 – up to 5 ha, 2 -from 5 to 10, 3 - from 10 to 15, 4 – from 15 to 25, 5 – from 25 to 35, 6 – from 35 to 50, 7 – above 50 ha

The gamma rank correlation indicated considerable positive relations between investing financial means, and the sources of income, development possibilities for the farm, the opinion on the topic of a possibility of raising the farm income, the evaluation of European integration, and the liability to risk. This means that most often farms were invested in by the respondents, who lived practically and entirely out of agricultural production, who sought the chances for the development of their farms, and, what is associated with this, the possibility of raising the gathered income. The described respondents were characterized by a lack of fear from taking risk-bearing decisions, and they saw the positive sides of the Polish integration with European structures.

As it is shown by the data displayed in Table 2, after the Polish accession to the European Union, the number of respondents, who declared to invest in their farms decreased from 42.9% to barely 22.6%. Similarly to the pre-accession period, also after 2004, the surveyed farmers destined the possessed capital mainly for the purchase of machines and devices used in production (18.9%). On the following places, the respondents invested in buildings and farming constructions (7.5%) and for the construction or renovation of habitable buildings (4.5%). The rank variation analysis has not pointed to a relation between the level of investment and such factors, as age, education and farm size.

In Poland, the most widespread phenomenon concerns the possession and use of own machines and devices. According to various authors, this is an expensive solution due to a low level of use of the equipment per year. This is undoubtedly a result of a small offer of companies providing machine service, but also the mentality of the farmers, who do not accept a common use of machines. The effect of this phenomenon is a surplus of machines in the Polish farms, which could be effectively used only in a five times bigger farm (Choszcz D., Konopka St., Mickiewicz B. 1998; Szuk T., 2003).

Table 2

Investments in respondents' farms in the years 2004 – 2005

Specification	neo-agricultural belt		borderline belt		seaside belt		Total	
	n	% resp	n	% resp	n	% resp	n	% resp
yes	55	20.9	77	30.0	15	11.5	147	22.6
no	208	79.1	180	70.0	115	88.5	503	77.4
total	263	100	257	100	130	100	650	100
buildings	15	5.7	25	9.7	9	6.9	49	7.5
machinery and tools	53	20.2	57	22.2	13	10.0	123	18.9
transport vehicles	11	4.2	3	1.2	3	2.3	17	2.6
building or house renovating	12	4.6	15	5.8	2	1.5	29	4.5
land purchasing	4	1.5	3	1.2	0	0.0	7	1.1

Source: The author's research

The chi-square test pointed to some vital differences between all sub-areas selected for research. As it is shown in the data presented in Table 2, the biggest group of farmers, who invested in their farms after the Polish accession to the European Union, were located in the borderline belt (30%), and the smallest group in the seaside belt (11.5%).

Since 2004, a new stream of financing has occurred for the Polish agriculture. It is associated with the realization of the Common Agricultural Policy within the EU. These are means provided as part of direct and structural funds. Altogether, in the years 2004 – 2006, agriculture and agricultural regions were granted over PLN 32 bi from the budget of the European Union. The Common Agricultural Policy is implemented in two streams. The first one is to support the agricultural sector through direct and market funds. The second stream concerns the influence upon the development of agricultural areas through, among others, the Rural Development Plan (Floriańczyk Z., 2003; Woś A., 2004).

The chances for development of the Polish food economy are supported also by structural funds coming from the Sector Operation Programme – Restructuring and Modernisation of the Food Sector And Rural Development (SOP), aimed generally at farmers and entrepreneurs working in specific sectors of agricultural produce processing.

General research results led to the conclusion, that on the territory selected for the research, gaining means coming from both of the above mentioned forms of financial support was on a relatively poor level. As it is displayed in Table 3, within the RDP, the highest number of respondents (32.6%) used the activity “supporting agricultural activity in the areas of unfavourable economic conditions”, together with “supporting multi-environmental enterprises and improving the welfare of animals” – 15.5%. The latter activity is particularly important due to the combination of two “options” of economic development combined with environmental protection in an arable farm (Metera D., Karaczun Z. M., Szymański B., 2003). In relation to the aforementioned, Poland should prepare for covering the biggest area as it is possible with agricultural – environmental funds. Such perspective is advantageous for our country, since we have much to protect and we cater for the fact that the value of Polish agriculture on the European market is the production of unpolluted and tasty food (Liro A., 2002).

The remaining actions, which are a part of the Rural Development Plan, were chosen considerably rarer (the lack of interest in them is described in the further part of the paper).

In the case of a Sector Operation Programme, the biggest interest was concentrated in gaining financial means aimed at investments in arable farms (8.3% of respondents). The remaining actions were chosen rather sporadically, since only 0.3 to 2.6% of arable farms owners took part in them.

A relatively small group of respondents pointed to material effects of the investments connected with using financial means coming from the Rural Development Plan funds and the Sector Operation Programmes. The biggest percentage of arable farms owners (8.5%) was of the opinion, that the gained funds allowed them to raise the quality of conducted production. A significant number of surveyed farmers named

the increase in the size of the farm, the rise of farm specialization (3.8%) each, and the introduction of new technologies (Table 3). It should be emphasized that nearly every tenth respondent did not notice any relative effects of gaining additional financial means.

Gradziuk (2006) evaluates the use of RDP and SOP in a different manner. Basing on the research conducted in a purposefully selected group of 41 farms unified in the Zamojskie Agricultural Community ("ZTR"), the author claimed that thanks to an active attitude, the members of the ZTR gained over PLN 2 mln. as part of the structural funds aid, and the total gross value of the investments realized with the use of these means equalled nearly to PLN 6 mln. The effects of this included changes in the technical equipment of the farms. The farmers purchased, above all, tractors of high power (from 185 to 260 KM), modern farming equipment (aggregates, revolving ploughs) and seeders, fertilizer sowers and sprinklers of high capability. Investments of this sort, which the members of the ZTR are mobilized to perform, such as: systematic increase in the size of the farm, enable them to introduce modern technical solutions and considerable improvement in the organization of work (Gradziuk B., 2006).

Table 3

The material effects of investments performed with the support from the RDP and SOP programmes

Specification	neo-agricultural belt		borderline belt		seaside belt		Total	
	n	% resp	n	% resp	n	% resp	n	% resp
solid increase of production quantity	2	0.8	4	1.6	1	0.8	7	1.1
increase of land surface	8	3.0	17	6.6	0	0.0	25	3.8
increase of specialization	10	3.8	13	5.1	2	1.5	25	3.8
growth of work efficiency	5	1.9	10	3.9	1	0.8	16	2.5
new technology implementation	3	1.1	15	5.8	1	0.8	19	2.9
increase of production quality	24	9.1	30	11.7	1	0.8	55	8.5
development of non-agricultural activity	6	2.3	1	0.4	0	0.0	7	1.1
no changes	19	7.2	33	12.8	8	6.2	60	9.2

Source: The author's research

The next issue concerned the business effects associated with the use of RDP and SOP funds. As it is indicated by the data presented in Table 3, the biggest number of respondents (13.7%) pointed to several facilitations in adjusting the farm to the changing conditions of the agricultural market. This allowed, in the opinion of 5.4% of arable farms owners, to be more competitive in the conducted activity. Similarly to the previous case, also here, nearly every tenth respondent claimed, that they did not notice any considerable changes.

Additional financial means allowed also, in the opinion on nearly every fourth respondent, to improve the economic effectiveness of the conducted activity. The surveyed farmers named such indexes here, as a rise in the income and lowering of production costs (Table 4).

Table 4

Financial and economic effects on enterprises performed with the support of the RDP and SOP programmes

Specification	neo-agricultural belt		borderline belt		seaside belt		Total	
	n	% resp	n	% resp	n	% resp	n	% resp
increase of economical effectives	35	13.3	77	30.0	6	4.6	118	18.2
decrease of risk	14	5.3	9	3.5	2	1.5	25	3.8
gain of tax benefits	1	0.4	2	0.8	0	0.0	3	0.5
better credit condition	5	1.9	1	0.4	0	0.0	6	0.9
no changes	20	7.6	22	8.6	6	4.6	48	7.4

Source: The author's research

Moreover, the arable farms owners named several extra-economic effects, which include in general the increase in satisfaction stemming from a better use of material resources (12.3%). In this case, also every tenth respondent did not observe any vital changes.

Conclusions

The owners of the examined farms used, on a large scale, the possibility of gaining financial means coming from the programmes which aim at adapting the Polish agriculture to the standards of the EU. Before 2004, nearly a half of the respondents invested the gained capital most of all in the modernization of the machine park and in the purchase of additional ground.

One of the negative phenomena observed on the territory covered by the research was a very low level of gaining financial means from the RDP and SOP. In addition, according to the respondents, the level of the absorbed capital did not satisfy their expectations.

One of the positive aspects lies in the average size of the farms, which several times exceeds the average for Poland (8.5 ha). On average, the biggest farms were located in the seaside belt – 31.4 ha., and the smallest in the borderline part of the voivodeship – 29.4 ha.

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Social and Economic Aspects of Child Care Benefits in Latvia

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Abstract

A typical feature of the demographic development in Latvia is a low birth rate. Latvia is one of the demographically oldest countries in Europe and the world, and it is affected by certain social, economic and legal factors. In order to improve the demographic situation in the country and provide the inhabitants with income during the age of work inability, the system of social care in Latvia is being constantly developed.

In Latvia child care benefit as part of social transfers is significantly affected by the economic activity of the inhabitants and the legislation. The amount of social transfers depends on the social and economic policy implemented in the country, which results from the perspective and priorities of the state development.

The aim of the research is to investigate and evaluate the amounts and tendencies of child care benefit, and the factors influencing it in Latvia.

Child care benefit is one of the state social benefits. From 2001 to 2007 child care benefit has increased 4.6 times or LVL 68.81, and in 2007 it reached LVL 88.13. Between 2002 and 2005 the child care benefit per one household member has increased by 150% in the cities, yet only by 70% in the countryside on average. In 2002 the child care benefit in average per one household member was LVL 5.10 in the cities and LVL 5.14 in the countryside, but in 2005 in the cities it increased up to LVL 12.75 and up to LVL 8.78 in the countryside. It has been affected both by the increase of the minimum wage and the growth of salaries in certain economic areas, as well as by the changes in the legislation.

Key words: child care benefit, demographics, social transfers

Introduction

Due to the fast economic development, the emigration of labour to the old EU member states and a low birth rate, the human resources have become one of the most topical issues of the economic policy in Latvia.

According to the research done by several scholars (Zvidriņš P., Krūmiņš J., Goša Z., Vītoliņš E., 2006), depopulation is a typical feature of Latvia in the recent years, and negative indicators of natural movement of inhabitants is characteristic to all regions and big cities of the country; besides, the relatively highest indicators are observed in Riga and Latgale. At the beginning of 2007 the number of population amounted to 2.281 million. Since 2000 the number has decreased by 100 thousand inhabitants or 4.2%. The demographic forecasts for the period until 2050 show that most probably the number of population in Latvia will decrease to 2.1 million in 2020 and around 1.9 million in 2050 (Demographics 2007).

I. Saulāja (Saulāja, 2006) and I. Bite (Bite, 2003) have done research on the state social security and welfare system in Latvia paying more attention to the integration of a person in the labour market after the parental leave, examining state social benefits that are received during the parental leave, as well as investigating the influence of state social policy on the actual level of well-being of the inhabitants.

However, there is comparatively little research done on the importance of child care benefit and its relation to the demographic situation in the country, as well as the legal and economic factors influencing it.

Unfortunately Latvia is already now one of the demographically oldest countries in Europe and the world. The number and proportion of children is systematically diminishing, but the number and proportion of people at retirement age is increasing. Such a demographic situation puts an extra load on the economics because the aims of the economic development are hardly compatible with the ageing of population. According to the Central Statistical Bureau (CSB) data, the proportion of children and young people up to 14 years in relation to the total number of population has decreased from 18% in 2000 to 14% in the beginning of 2007. During the same period, the proportion of the inhabitants that are 60 and older has increased from 21% to 22.1%.

Taking into account the low birth rate in the country, the creation of favourable circumstances and support for families is a vital precondition. Therefore the "National Development Plan of Latvia 2007 –

2013” prioritises an individual person, and it emphasises that in order to improve the demographic situation, the state policy will mainly focus in two directions – protection of children’s rights/ the rights of children and family, and rendering of the state support to families with children within the social security system. A large part of state social benefits is intended exactly for families with children; however, the small amount of separate state allowances does not provide sufficient support. The demographic situation can improve in future experiencing also more favourable socially economic conditions.

The demographic situation in the country and the predictions of other scholars in this field determined the choice of the research topic – the analysis of one of the social benefits – **child care benefit** – in Latvia, which can directly influence the implementation of the state demographic policy.

Child care benefit is one the types of social transfers that has a great importance on the household budget income in a situation, when a child is born in a family. Simultaneously, the amount of child care benefit affects the demographic load in the country, which is not an unimportant indicator in the improvement of the socio-economic situation.

The research is based on the monographic method, analysis and synthesis, deduction and induction, statistical data investigation and graphic representation method.

Hypothesis: Child care benefit is a social transfer that is closely related to the demographic situation, and is affected by legal and economic factors.

The aim of the research is to investigate and consider the amounts, tendencies, and the affecting factors of child care benefit in Latvia.

In order to reach the aim of the research, the following **objectives** were set:

- to investigate the economic and legal nature of child care benefit;
- to analyse the place of the child care benefit in social transfers and define tendencies;
- to evaluate the influence of salary as an economic factor on the amount of child care benefit.

Materials and Methods

The data of the Central Statistical Bureau “Income and living standards in Latvia” (2007), “Demographics 2007” (2007) and “Household budget in 2005” (2006), as well as State Social Insurance Agency (VSAA) data was used have been used for the purpose of the study.

The legislative and normative documents of the Republic of Latvia were used to analyse the influence of legal factors on child care benefit.

The structural analysis method and dynamic time series analysis method were used to investigate the tendencies of child care benefit in Latvia.

The graphic method and the method of analysis of synthesis were used to analyse economic factors.

The methods of analysis and synthesis, as well as methods of induction and deduction were used to draw the conclusions.

Results and Discussion

1. Theoretic and Legal Aspects of Child Care Benefit

In order to provide a sustainable social security system in Latvia, the elaborated “National Development Plan of Latvia 2007 – 2013” envisages the main tasks to provide the financial stability of the social insurance system and contribute to its development, as well as to promote greater understanding of the society on the importance of the social insurance system.

Every inhabitant of Latvia is concerned with the issues of material well-being and the quality of life, which are in turn related to the areas of social insurance – state social insurance, state social benefits, social assistance and social services.

The guiding principles of the social insurance shall provide for:

- 1) solidarity between social insurance contribution payers and recipients of social insurance services;
- 2) utilisation of social insurance funds only for social insurance services in accordance with the law.

State social benefits provide a universal state support in the form of financial allowance to particular groups of population in cases of social risks and situations connected with the decrease in income.

According to the law “**On State Social Allowances**” (2002), the state social allowances are divided into regular disbursement benefits and single disbursement benefits, as shown in Table 1.

Types of state social benefits in Latvia

<i>Regular disbursement benefits</i>	<i>Single disbursement benefits</i>
<ul style="list-style-type: none"> • State family allowance • Child care benefit • Guardian's allowance for a dependent child • Remuneration for the fulfilment of a guardian's duties • Remuneration for the fulfilment of a foster family's duties • Allowance for the compensation of transport expenses for disabled persons who have difficulties in movement • State social security benefit • Remuneration for the care of an adopted child • Care of disabled child benefit 	<ul style="list-style-type: none"> • Childbirth allowance • Funeral grant • Remuneration for adoption

Source: made by the authors according to the law "On State Social Allowances" (2002)

Starting from 2003, the child care benefit is paid until the child reaches the age of two. The child care benefit until the child reaches the age of one year is currently functioning according to a composite system: for the employed the child care benefit is calculated and allocated according to the principle of state social insurance, but for the unemployed the child care benefit is a typical state social benefit with a constant amount. The child care benefit is funded from the state general budget.

The amount of child care benefit is affected by:

- the age of the child;
- the salary of insurance contributions;
- the fact of employment.

One of the most important aspects influencing the amount of child care benefit is the salary of insurance contributions of an individual. According to the law "On Maternity and Sickness Insurance" (1996) the salary of insurance contributions is the income from which the state social insurance contributions are paid.

The law "On State Social Insurance" (1997) states that the following persons are subject to the social insurance - all employees who have reached 15 years of age employed by an employer – a domestic tax payer or foreign tax payer of another member state, as well as:

- persons taking care of a child who has not reached one and a half years of age;
- persons receiving unemployment benefit;
- unemployed disabled persons;
- persons receiving a disabled child care benefit;
- persons receiving a maternity or sickness benefit;
- persons receiving remuneration for the care of an adopted child;
- persons whose spouse performs diplomatic or consular service in a foreign state;
- persons who are located in a relevant foreign state in the status of spouse of a soldier performing service duties;
- self-employed persons.

Latvian citizens, non-citizens, aliens and stateless persons to whom a personal identity number has been granted and who permanently reside in the territory of Latvia have the right to state social allowances.

Affected by the changes in the legislation, the child care benefit has grown annually. From 1998 to 2003, the amount of child care benefit was as follows:

- for person taking care of a child who has not reached one and a half years of age – LVL 30 per month;
- for person taking care of a child from one and a half until 3 years of age – LVL 7.5 per month.

From 2003 to 2005 the amount of child care benefit was increased, but the time period when it can be received was diminished:

- for persons taking care of a child until one and a half years of age – LVL 30 per month;
- for person taking care of a child from one and a half until 2 years of age – LVL 22 per month.

Significant changes in the legislation were introduced in 2005, when the minimum and maximum child care benefit amounts were determined, as well as the fact of employment was taken into account, namely, whether the person who took care of the child was employed or not. Besides the fact whether the person is on parental leave or not was taken into account.

From 2005 to 2007 according to the legislation of the Republic of Latvia, the amount of child care benefit is determined:

- for person taking care of a child *up to one year of age*, if this person is employed – is deemed to be an employee or self-employed person in accordance with the law “On State Social Insurance” (1997) and is on parental leave or is employed during the period of childcare, but is not on parental leave – 70% of the average monthly salary of insurance contributions, but not less than LVL 56 per month and not more than LVL 392 per month;
- for person taking care of a child *up to one year of age*, if this person is not employed – is not deemed to be an employee or self-employed person in accordance with the law “On State Social Insurance” (1997) – LVL 50 per month;
- for person taking care of a child from *one year up to two years of age* – LVL 30 per month.

If the child care benefit is allocated in case of twins of multiple births, for each following child an additional allowance is paid extra to the regular benefit in accordance with the Cabinet of Ministers Regulations No. 644 “*On the Procedure for Calculation, Review and Payment of Child Care Benefits and Compensation in Case of Multiple Births*”. Extra allowances on child care benefit amounts are determined:

- for person taking care of children up to one year of age – LVL 50 per month for each following child;
- for person taking care of children from one year up to two years of age – LV 30 per month for each following child.

One problem of the efficiency of child care benefit was the connection between the benefit and the parental leave which until June 1, 2002 was given only to the mother of the child for the period up to three years. But until March 1, 2007, the child care benefit could be received only by the person who was on parental leave, which limited the possibility for parents to choose which of them will receive this benefit. It is a positive aspect that since March 1, 2007, the parents of the child can freely choose which of them will receive the child care benefit irrespective of the work load and salary, and it also does not matter which of the parents is on parental leave. Only it has to be taken into account that in accordance with the current legislation, the person which is taking care of a child up to one year of age and receives child care benefit, is socially insured for unemployment and pension. During this period the contributions for the unemployment and pension insurance are paid from the fixed amount of the state general budget – LVL 50.

With the 2008 budget draft law, the government has supported the amendments to several laws prepared by the Ministry of Welfare, which determine the introduction of a new social insurance benefit – parent benefit, which will partially replace the current child care benefit. Employed persons will receive parent benefit, but unemployed persons will continue to receive child care benefit. The amendments envisage that starting from January 1, 2008, the parent benefit will not have the maximum limit of LVL 392, and namely, a person who is taking care of a child up to one year of age will receive a benefit that equals to the net salary. The minimum parent benefit will be LVL 63 per month. The benefits must be requested during 12 months from the day when the right comes into force. The new parent benefit will be funded from the social insurance budget.

2. The Place and Role of Child Care Benefit in Social Transfers

In Latvia the child care benefit as one component of social transfers is significantly affected by the economic activity of inhabitants and the legislation. The amount of social transfers depends on the social and

economic policy implemented in the country, which in turn results from the vision of state development and the priorities. According to the CSB results of the analysis of Community statistics on income and living conditions (EU-SILC), in 2005 the social transfers constituted 23.6% of all household income, but there is a difference between the cities and the countryside. The proportion of social transfers in the countryside is 28.9% of all household income, but in Riga only 19.0%.

Table 2

Average household transfers per one household member and their structure in Latvia in the period from 2002 to 2007

<i>Transfers</i>	All households				Urban				Rural			
	2002		2005		2002		2005		2002		2005	
	<i>LVL</i>	<i>%</i>	<i>LVL</i>	<i>%</i>	<i>LVL</i>	<i>%</i>	<i>LVL</i>	<i>%</i>	<i>LVL</i>	<i>%</i>	<i>LVL</i>	<i>%</i>
Total	272.99	100	319.45	100	286.85	100	333.35	100	243.76	100	290.14	100
<i>of which</i> pensions	197.35	72.3	238.78	74.7	210.05	73.2	249.98	75.0	170.59	70.0	215.17	74.2
state social benefits	34.06	12.5	57.68	18.1	30.59	10.7	58.17	17.4	41.38	17.0	56.65	19.5
<i>of which</i> child care benefit	5.11	1.9	11.47	3.6	5.10	1.8	12.75	3.8	5.14	2.1	8.78	3.0
other	41.58	15.2	22.99	7.2	46.21	16.1	25.20	7.6	31.79	13.0	18.32	6.3

Source: made by the authors according to the CSB data (*Household budget...., 2003, 2006*)

From the data presented in Table 2 it can be seen that transfers per one household member in 2005 were LVL 333.35 in the cities, while only LVL 290.14 in the countryside, which is by 13% less than in the cities. Analysing their structure, the conclusion can be made that the greatest proportion, almost 75% is constituted by pensions. State social benefits comprise a larger proportion in the countryside (19.5%) than in the cities (17.4%). It indicates that in the countryside social benefits have a greater significance in the income of the inhabitants. The information presented in Table 2 demonstrates that there is a significant difference between the cities and the countryside in the amount of child care benefit, and the difference is LVL 4.02 or 31.5% that is influenced by the economic activity and average wages.

Analysing the dynamics of the data on household budget from 2002 to 2005, we may conclude that the child care benefit on average per one household member in the analysed period has increased by 150% in the cities, while only by 70% in the countryside. In 2002 the child care benefit on average per one household member in the cities was LVL 5.10, in the countryside – LVL 5.14, but in 2005 it already increased up to LVL 12.75 in the cities, yet only up to LVL 8.78 in the countryside. This was determined by significant changes made in the legislation in 2005 that substantially affected the determination of the amount of child care benefit in Latvia.

The calculations done in the research show an increasing importance of the child care benefit and its proportion in the state social benefits. If in 2001 the recipients of child care benefit comprised 8.0% of all state social benefit recipients, then in 2007 this figure has reached 8.4%.

The number of recipients of the child care benefit and the changes are directly connected with the demographic situation – the number of children born in the country. Therefore the calculations were done in the research to evaluate how many parents use this benefit. In order to determine the potential number of child care benefit receivers, the authors have used the assumption based on the legislative norms that those parents whose child was born until December 2002 could receive the benefit until the child reached the age of three, but starting from 2003 this benefit can be received until the child reaches the age of two.

The number of child care benefit recipients in Latvia in the period from 2001 to 2006

Indicators	2001	2002	2003	2004	2005	2006
Average number of child care benefit receivers	46 851	46 672	45 915	44 600	38 475	35 842
Potential number of child care benefit receivers	59 308	59 956	60 714	59 384	41 831	43 761
Share of benefit receivers of potentially possible receivers	79.0	77.8	75.6	75.1	92.0	81.9

Source: made by the authors according to the SSIA and CSB data (1999 – 2007)

The performed calculations show that from 2001 to 2004 the proportion of child care benefit recipients of the potentially possible recipients has decreased from 79.0% to 75.1%. This allows drawing a conclusion that this benefit could not perform the economic functions, and parents choose to work in order to provide the income for the family. Starting from 2005, the proportion of the benefit recipients sharply increases reaching 92.0%, which was determined by the change in the benefit amount in the law “*On State Social Insurance*”. However, taking into account the data of the research, in 2006 the proportion of the benefit recipients decreases again thus causing a repeated reconsideration of the legislative norms in order to ensure the support to families with children and contribute to the implementation of the demographic policy in the country.

The statistical data on demographics of the year 2006 summarized by the Central Statistical Bureau show that the number of children born in 2006 (22264 children) has grown by 3.6% in comparison with 2005, but in comparison with 2000 the figure has increased by 10%. The number of children born (9.7 children) per 1000 inhabitants has been the highest indicator in the last 13 years.

3. Economic Factors Affecting Child Care Benefit

During the performed research it was ascertained that the legislation determined a gradual increase in the amount of child care benefit, which also influenced the number of the benefit recipients. In further investigations it was important to find out the dynamics of how the amount of child care benefit had changed. The calculations presented in Table 4 demonstrate that during the period from 2001 to 2007 the child care benefit has increased by LVL 68.81 or 4.6 times. The lowest child care benefit has been in 2002 amounting to LVL 19.09. The benefit has significantly increased starting from 2005 which can be explained by the changes in the legislation, namely, both the minimum and the maximum amount of child care benefit was increased. As well as that, the state minimum wage has increased, which affects the average amount of the child care benefit. Notwithstanding the fact that the maximum amount of child care benefit is LVL 392 per month, the calculations in the table show that a large proportion of inhabitants have received the minimum amount.

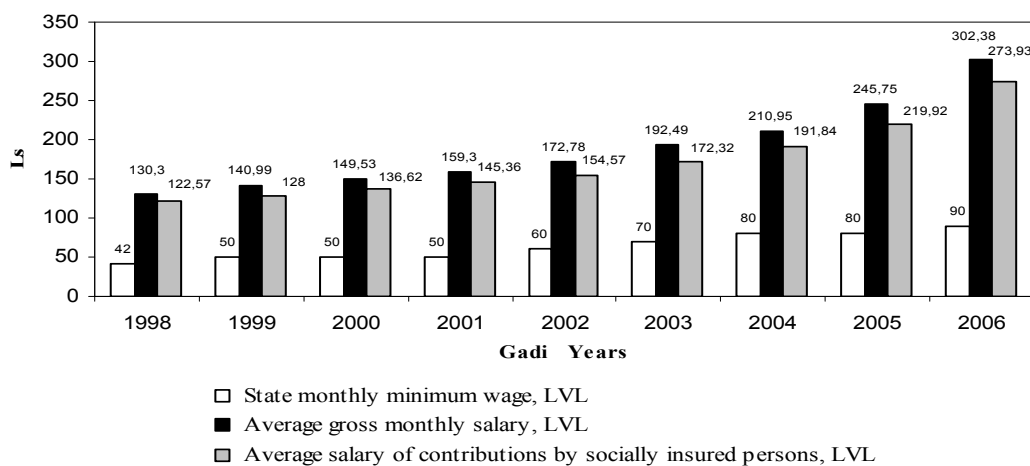
The amount of the benefits are reviewed by the Cabinet of Ministers on the motion from the Minister of Welfare according to the possibilities of the state budget, considering the economic situation in the country and taking into account the increase of average gross monthly salary fixed by the Central Statistical Bureau. However the amounts of state social benefits are fixed taking into account the insurance contributions of a person. Thus, in order to evaluate the analysis of the economic factors influencing the amount of child care benefit, the analysis of the changes in the state monthly minimum wage, gross monthly salary and average salary of contributions of socially insurable persons was carried out for the period from 1998 to 2006.

**The dynamics of average amount of child care benefit in Latvia in the period from
2001 to 2007**

Year	Average amount of child care benefit, LVL	Absolute rise, LVL		Growth rate, %		Increment rate, %		1% absolute importance of increase $tm_{(1\%)}$
		Chain $\Delta m_{(k)}$	Base $\Delta m_{(b)}$	Chain $Tm_{(k)}$	Base $Tm_{(b)}$	Chain $tm_{(k)}$	Base $tm_{(b)}$	
2001	19.32	-	-	100.0	100.0	-	-	-
2002	19.09	0.23	0.23	98.81	98.81	-1.19	-1.19	0.19
2003	19.49	0.4	0.17	102.10	100.88	2.10	0.88	0.19
2004	20.13	0.64	0.81	103.28	104.19	3.28	4.19	0.19
2005	52.01	31.88	32.69	258.37	269.20	158.37	169.20	0.20
2006	68.89	16.88	49.57	132.46	356.57	32.46	256.57	0.52
2007	88.13	19.24	68.81	127.93	456.16	27.93	356.16	0.69

Source: calculations done by the authors on the basis of SSIA data

According to the data presented in Figure 1, it can be concluded that state monthly minimum wage, average gross monthly salary and average salary of contributions by socially insured persons in the period from 1998 to 2006 have a tendency to grow which provides a possibility to increase the amount of child care benefit in the country. At the same time, positive structural changes can be observed. If in 1998 the average salary of contributions by socially insured persons exceeded the monthly minimum wage 2.9 times, then in 2006 this relation was more than 3 times.



Source: figure made by the authors on the basis of SSIA and CSB data

Figure 1. State monthly minimum wage, gross salary and average salary of contributions by socially insured persons in the period from 1998 to 2006, LVL

There has also been change in the difference between the average gross monthly salary and average wage of contributions by socially insured persons. If the difference was 6% in 1998, then in 2006 it was already 10%. This can be explained by the fact that gross salary consists of all income acquired at work before taxes, while the average salary of contributions by socially insured persons is constituted from the

social contributions done by a person. In accordance with the current legislation in force, it is stated that the state social contributions and personal income tax is not applied to the presents or gifts by employer to the employee if their total amount does not exceed the amount of minimum monthly wage in an accounting period, as well as funeral grant assigned by an employer not exceeding LVL 150. The minimum monthly wage has grown from LVL 40 to LVL 90 or by 125% from 1998 to 2006, but the average salary of contributions by socially insured persons has increased from LVL 123 to LVL 274 or by 124%. The increase in the average salary of contributions by socially insured persons has been advanced by the growth in the minimum monthly wage, which also enabled the possibilities to increase the child care benefit.

Conclusions

1. Child care benefit as one of the components of social transfers is significantly influenced by the legislative norms and the economic activity of the inhabitants.
2. Child care benefit in Latvia functions in the so-called mixed system, namely, for the employed taking care of a child up to one year of age the child care benefit is calculated and allocated according to the principle of state social insurance, while for the unemployed - the child care benefit is a typical social benefit with a constant amount.
3. In 2002 the child care benefit on average per one household member in the cities was LVL 5.10, and in the countryside LVL 5.14, while in 2005 it already has increased up to LVL 12.75 in the cities, but in the countryside only to LVL 8.78.
4. From 2001 to 2004 the proportion of child care benefit recipients of the potentially possible number has decreased from 79% to 75.1%. It can be concluded that this benefit could not perform the economic functions, and parents choose to work in order to provide the family income.
5. The child care benefit increases significantly starting from 2005, which can be explained by changes in the legislation, when both the minimum and the maximum amount of child care benefit was increased. The average child care benefit in 2007 reached LVL 88.31.
6. The monthly minimum wage, average gross monthly salary and average salary of contributions by socially insured persons in Latvia in the period from 1998 to 2006 have a tendency to grow, which provides a possibility to increase the amount of child care benefit in the country.
7. Starting from 2008 the social benefit system is being improved – a new social insurance benefit – parent benefit – is introduced; this benefit does not have a fixed maximum limit and that will provide the parents of a child with income equivalent to their salary before the birth of a child, thus it will more successfully perform its economic and social functions.

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Changes in Farmers' Household Income in Poland in the Years 2003-2006

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Abstract. The article presents the changes in dimensions and structure of farmers' household income in comparison with other economic groups in the years 2003-2006 as well as the main reasons for the changes. The article presents also the volumes of budget and the EU resources allocated to the farmers' households. Also the changes in material resources of the researched households, resulting from the increase of income are presented. The numerical data used in the article come mainly from the households' budgets surveys carried out by the GUS and from the "Social Diagnosis" survey. The following methods were applied when developing statistic material: descriptive and comparative methods, as well as the logical induction method. In the surveyed period real income of farmers' households experienced the highest increase (by ca. 25%), although they are still lower than average income of other types of households. Expenditure on consumer goods and services has also increased and the level of households' equipment improved.

Key words: farmer household, income of households, direct subsidies, economic situation

Introduction

Income of rural population depends on various microeconomic factors, connected with farms, and macroeconomic, among which the state policy and activities constitute an important factor. Income in farming is additionally influenced by the weather conditions and other, not economic, factors.

In the surveyed period the economic situation in Poland has been good. The real annual GDP growth amounted to 5-6%. Poland has become the European Union member state and resources from the Union funds came to our country. A significant portion of the resources has been allocated to rural areas and directly to agriculture. It seems interesting to answer the question, whether income of rural population in Poland has increased after Poland entered the EU structures and what kind of changes they have been. Surely many other factors, such as prices of agricultural products and production resources, abilities of supplementing income from farming activity with the income from other sources, and the state policy regarding this group of households, have a significant and frequently decisive influence on the income.

The aim of this study is to analyse the changes in income of farming households in the years 2003-2006 against other economic groups, and an attempt to determine reasons of the changes. The level of income is also presented for comparative purposes of households in 2003, i.e., before the EU accession. The article mainly highlights statistical data from households income surveys carried out by the GUS in the years 2003-2006, using a representative method (Households budgets, 2004, 2005, 2006, 2007) and statistical data from "Social Diagnosis", demonstrating conditions and quality of life of the Poles in the years 2004-2007 (Czapiński J., Panek T., 2005, 2006, 2007), as well as performing the representative sample of over 3000 households. The data of GUS cover the period up to the end of 2006, while the statistical data of the "Social Diagnosis" reach as far as to February 2007.

The following methods were applied when developing the statistical material: descriptive and comparative method, and logical induction method.

Changes in levels of income in farmers' households and their determinants

In 2006 real income of farmers' households increased by over 1/3 in comparison with the income of 2003 (Table 1). In other socio-economic groups the increase of real income was smaller. In the researched period, income of households belonging to self-employed has increased by 17.3%; however, the changes mainly occurred in 2006, when the unemployment started decreasing significantly, and the hysteresis effect on the labour market decreased, and internal demand started growing. Income of employees has increased since 2003, yet only by 8%, while the income of retirees and pensioners by 6.5% (these changes also occurred mainly in 2006).

Table 1

Dynamics of disposable real income in individual types of households in the years from 2003 to 2006

Year	Total	Including households of			
		employees	farmers	self-employed	retirees and pensioners
previous year=100					
2003	101.7	103.7	82.2	101.1	102.3
2004	99.9	99.8	108.0	102.2	98.6
2005	101.4	101.7	110.0	102.5	100.4
2006	108.5	106.7	113.2	112.0	107.6
2003=100					
2003	100.0	100.0	100.0	100.0	100.0
2004	99.9	99.8	108.0	102.2	98.6
2005	101.3	101.5	118.8	104.8	99.0
2006	109.9	108.3	134.5	117.3	106.5

Source: the author's own study, based on Households Budgets 2003, 2004, 2005, GUS, Warszawa 2004, 2005, 2006

Income of farmers' households has improved noticeably in 2004, which resulted mainly from the fact that dynamics of the growth of agricultural products prices was bigger than dynamics of the growth of prices of goods and services purchased by farmers⁷, and from the European Union funds and state budget, as well as from significant development of vegetable production. In 2005, on the other hand, despite much weaker production results in agriculture, the decrease of global farming production in comparison with the previous year by 2.5% (vegetable production by 8.9%) and the "price scissors" that were unfavourable for agriculture, real income in farmers' households increased by 10% (GUS, 2005). It seems to have been mainly due to subsidies resulting from the Common Agricultural Policy. In 2006 global farming production decreased by 1.4%, the price ratio was more favourable for farmers (102.0%) and real income increased by over 13%.

The estimates of real agriculture income per worker in 2007, published by the Eurostat (Eurostat, 2007) indicate further increase of real income in Polish agriculture – by 11.9% in comparison with 2006. According to the Eurostat data, in 2007 real agriculture income per worker in Poland increased in comparison with the year 2000 by ca. 110%, and it takes fourth position among the EU countries (after Latvia, Lithuania and Estonia).

Volumes and significance of direct subsidies

Since 2004 significant resources have been allocated to farmers' households, coming mainly from direct subsidies (Table 2). The average amount of direct subsidies per household increased from PLN 4.5 thousand in 2004 to PLN 5.3 thousand in 2006. They are of course average amounts.⁸ The number of applications considered in the researched period increased from less than 2%; whereas the amounts allocated to area payments increased by nearly 23%.

As it stems from the data acquired from the Agriculture Development and Modernisation Agency that disburses direct subsidies, nearly 13% of the amount of direct subsidies is given to the biggest farms (of the area of 300 ha). In 2006 the farms obtained nearly PLN 1 billion. Slightly over 50% of the EU money goes to the medium size farms of the area from 5 to 30 ha. Small farms, of the area up to 5 ha, receive over 13% of

⁷ For the first time in three years the agricultural products prices in relation to production resources prices price relation indicator, the so called "price scissors" were positive for farmers and amounted to 102.6%.

⁸ In 2006 the highest paid sum of direct subsidies amounted to PLN 7.3 million and it was paid to a farming company, while the highest sum paid in the same year to a farmer amounted to PLN 3.7 million (ARiMR, 2007).

the resources, but even the relatively small amounts going to these farms constitute a significant support, frequently of social nature (ARiMR, 2007).

Table 2

Number of considered applications for direct subsidies and amounts of actual payments in campaigns 2004-2006 (in PLN thousand)

Specification	2004	2005	2006	2006 (2004=100)
Number of considered applications	1 400 370	1 483 628	1 468 614	101.7
Actual payments made, including:				
Single Area Payments	2 853 053	3 158 997	3 876 975	135.9
Supplementary Area Payments	3 488 440	3 530 015	3 914 199	112.2
Total per campaign	6 341 493	6 689 012	7 791 174	122.9

Source: the authors own calculations based on the Administrative Information System ARiMR, www.arimr.gov.pl

Money from direct subsidies is not the only resources going to farmers' households. In the years from 2004 to 2006, in the framework of the Rural Areas Development Plan, the amount of PLN 12 713 236 thousand went to rural areas. The money was allocated, among other things, to structural pensions, support of semi-subsistence farms or farms situated in the areas of unfavourable farming conditions.

The studies on rural areas and agriculture, carried out annually by Pentor Institute show that in 2005, 62% of the studied farms admitted that land subsidies had improved their economic situation. In 2006 the percentage increased by another 4 percentage points. At the same time, a group declaring that subsidies have not significantly influenced the situation on their farms has reduced. In 2005 34% of respondents declared the lack of influence of subsidies on their situation, while in 2006 only 26%. Farmers are becoming increasingly interested in other support instruments (MRiRW, 2006).

The meaning of received subsidies for the households' income depends on a farm size and type. A tendency for decreasing significance of subsidies for income is visible if farms are divided according to their economic size. In the smallest farms group (up to 5 ESU) the received subsidies constituted over 35% of income, while in the biggest farms group the subsidies participation in income drops below 10%. If farms are divided based on area classes, it can be noticed that the participation of subsidies in income of small farms (up to 5 ha) amounts only to 3%, while in the case of big farms (over 50 ha) to ca. 16%. When farms are divided according to the type of agriculture, the biggest participation of subsidies in income can be noticed in the "other permanent crops" type (over 46%) (Goraj L., 2005).

Money from direct subsidies have been frequently spent by farmers on investments – purchase of land, machines and production resources – 53% of respondents, and credit repayment – 16%. 23% of respondents allocated the received money for the renovation of a house or utility buildings, while 34% to current spending (Czapiński J., Panek T., 2005). It is interesting that almost 9% of farmers have spend the money from subsidies on education of their children.

Income diversity

Despite a considerable increase, the amount of farmers' income in 2006 was lower than the average household income by over 17%, while in 2003 it was by 1/3 lower (Table 3). It can be added that in 2006 an average disposable income per person in farmers' households was lower by over 21% than in pensioners' households and by nearly 40% lower than in self-employed households; however still higher by 8% than the income of workers' households.

As it noticeably stems from the data presented in Table 3, the income of farmers' households kept growing in the studied period (an average annual growth rate in the years 2004-2006 amounted to 11.5%), nearing the average income level. Income of self-employed households is much above the average and the differences are increasing. Income of workers and pensioners, on the other hand, is becoming relatively lower in comparison with the average income.

During eleven months of 2007 remunerations in the enterprises sector have increased by 10%; thus a considerable increase of the total average monthly disposable income can be expected. It seems then, that

despite the increase of income in farmers' households, the level of income in comparison with an average income will not change significantly in 2007.

Table 3

Average monthly disposable income per person in individual types of households in the years 2003-2006 (total=100)

Year	Total	Including households of				
		manual labour positions	non-manual labour positions	farmers	self-employed	retirees and pensioners
2003	100.0	78.7	142.4	67.1	125.5	106.9
2004	100.0	75.9	145.3	73.6	127.2	106.0
2005	100.0	74.3	139.6	79.6	128.3	105.1
2006	100.0	74.6	134.8	82.6	132.1	104.6

Source: the authors own study, based on Households Budgets 2003, 2004, 2005, 2006, GUS, Warszawa 2004, 2005, 2006, 2007

“Social Diagnosis” provides the data necessary for studying diversity of income not only per person, but also per household and an equivalent unit between different socio-economic groups. In February 2007, net income of a farmer's household was higher by nearly 4% than the income of an average household. On the other hand, income per person or an equivalent unit in the households is much lower than the average.

Table 4

Net incomes of households in February 2007 by different socio-economic groups (total=100)

Socio-economic group	Net income		
	per household	per person	per equivalent unit
Total	100.0	100.0	100.0
Workers	116.3	101.3	107.1
Farmers	103.8	65.2	80.3
Workers using a farm	108.7	70.1	82.7
Retirees and pensioners	75.0	102.5	91.3
Self-employed	161.5	146.2	155.6
People making living from non-profit sources	48,2	57,4	56,2

Source: the author's own study based on Czapiński J., Panek T. (red), (2007), *Diagnoza Społeczna 2007*, Rada Monitoringu Społecznego, Warszawa

It results mainly from a bigger number of persons in an average farmer's household (4.37 people in comparison with 3.05 on average in all households). The lowest income was recorded in households making living from non-profit sources.

In February 2005 farmers' households were asked on the lowest monthly net income in PLN allowing making the ends meet, and they indicated the amount of PLN 749 per an equivalent unit. It was one of the lowest aspiration levels as regards income situation among all different socio-economic types of households (self-employed households – PLN 1089, workers' households – PLN 1005 per an equivalent unit). In the researched period, aspirations as to income allowing to satisfy needs on the minimum acceptable level has increased considerably. The highest increase has been recorded in the farmers' households – up to PLN 936 per an equivalent unit. In the situation in which fixed incomes would not allow to satisfy current needs, the farmers' households preferred active methods of overcoming difficulties, i.e., taking up additional job by a member of a household.

Analysing household income from the point of view of the size of a locality, it can be noticed that a disposable income per person in the smallest cities group (up to 20 thousand residents) is higher than in the rural areas by nearly 17%, while it is higher by 93% in the group of biggest cities.

Different studies show that the increase of farmers' income has resulted in increased diversity of incomes inside the group of farmers' households. Diversity of income has been measured by a relationship of the ninth to first deciles in the income distribution (Table 5).

Table 5

Diversity of net income in farmers' households in the years between 2003 and 2007

Years	Deciles for monthly net income in PLN								
	per household			per person			per an equivalent unit		
	First	Ninth	Ninth/first	First	Ninth	Ninth/first	First	Ninth	Ninth/first
2003	500	3000	6.0	150	750	5.0	262	1116	4.3
2007	638	4856	7.6	188	1000	5.3	328	1548	4.7

Source: Czapiński J., Panek T. (red), (2006), *Diagnoza Społeczna 2005*, Wyższa Szkoła Finansów i Zarządzania, Warszawa

The most adequate income category is the income per an equivalent unit, offering the basis for comparing income of households of different demographic constitution. In 2007 the biggest diversity of income was recorded in the group of farmers' households, when analysed both per an equivalent unit and per a household. In other household groups the diversity of income per an equivalent unit oscillated from 3.03 to 4.32 (ninth to first deciles), respectively households 3.3 – 4.6. It seems to have been a result of a phenomenon of polarisation of farmers' households into two groups – one dealing with market production and the other one being a social households group. The phenomenon is also connected with a specific division of aids.

It must be added that the diversity of income in all households in Poland in the years 2000-2003 has increased considerably (by nearly 18 percent), and then dropped in the years 2003-2005 (by less than 7 percent), and has been subject to further decrease in the years 2005-2007 (by 2 percent).

Table 6

Structure of disposable income in farmer's households in the years 2003-2006 (in %)

Specification	2003	2004	2005	2006
Disposable income	100.0	100.0	100.0	100.0
Including income from:				
- hired work	0.1	0.1	9.6	9.7
- self-employment	1.5	1.8	1.3	1.4
- a private farm	68.7	72.8	67.4	67.6
- a social security benefits	20.7	17.7	15.1	14.3
- a social assistance benefits	4.9	4.1	3.6	4.1
- other sources	4.1	3.5	3.1	2.9

Source: the author's own study based on Households Budgets 2003, 2004, 2005, GUS, Warszawa 2004, 2005, 2006

Although the income situation of farmers' households has improved, over 23% of people living in these families were threatened in 2006 with a statutory poverty, i.e., income made by the families was lower than the amount that, according to the law, gives the right to apply for a financial aid from the social welfare. However, the percentage of such families is decreasing (in 2005 it was by 5 percentage points higher). The participation of households threatened with subjective poverty is much higher in all household groups. In February 2007 it amounted to over 60%, but it decreased by nearly 10 percentage points in comparison with 2006 in the farmers' households group.

The structure of income earned by farmers' households has slightly changed in the researched period. Unfortunately, the data presented in Table 6, referring to years 2003-2004 and 2005-2006 are not

fully comparable, as in 2005 a portion of a population of workers' households using farms were added to the farmers' household group. In 2005 the GUS resigned from separating this group of households.

The studies carried out in the comparativeness conditions show, however, that in the years 2003-2005, in farmers' households, the participation of income from the main source of income, i.e., from using a farm in their disposable income has increased by over 5 percentage points, and constitute almost $\frac{3}{4}$ of their disposable income.⁹ The participation of social securities income in farmers' income structure has decreased. The decrease of income from these sources can also be noticed if analysed in absolute figures –the income from incapacity benefits has decreased by nearly 17% in the researched period.

Changes in material resources of households

The amounts and changes of income are the factors influencing households' expenditures. In the researched period consumers' expenditures of farmers' households have increased actually by less than 15%, i.e., by much less than real income.

In the years 2003-2006 there were rather big differences in the average monthly expenditures among individual socio-economic groups. In 2004, the level of consumers' expenditures in farmers' households was lower than the average by 27%, and by 23% in the years 2005 and 2006.

The level of equipment of households in durable products has also improved in the researched period. It refers mainly to audiovisual and multimedia equipment, i.e., DVD and CD players, radio cassette players with CD, video cameras, personal computers (including computers with Internet access), printers and private mobile phones, and to household equipment, such as dishwashers and microwaves. The most visible improvement of equipment was recorded in farmer's households. In 2003 every sixth farmers' household had a personal computer; however, Internet access was rather sporadic. In 2006, on the other hand, almost every second farmers' household had a personal computer (15% with Internet access). Also the biggest increase of the number of mobile phones and cars was recorded in the studied households. Such big changes in the equipment result to a great extent from the original level. In some socio-economic groups already in 2003 a personal computer was present in every second household.

Members of farmers' households usually have no savings. The studies show that the smaller locality the bigger percentage of households without any savings. Households declaring the lack of savings are usually situated in the country or in the smallest towns (over 83% and 79% respectively). Farmers' households, similarly to workers' households, are the most indebted ones (respectively 53% and 54%). Farmers most often take bank credits (almost 95% of all the people taking credits). Debts in other institutions were made mainly by workers' households (over 32% of all the people taking credits) (Czapiński J., Panek T., 2005).

Conclusions

Based on the above analysis the following conclusions can be drawn.

1. In the years from 2003 to 2006 real income of farmers' households in Poland has increased by over 1/3. The pace of changes has been growing each year. An average yearly growth rate of farmers' households income in the years 2004-2006 amounted to over 11%. Real income of other social and professional groups was growing much slower.
2. Despite the increase, according to GUS the disposable income per person in farmers' households in 2006 amounted to ca. 83% of the average income of households and a little more than 62% of the income of self-employed households. According to the "Diagnoza Społeczna", the net income per person in farmers' households constitutes only ca. 65% of the average, while per a household as much as 104% of an average income.
3. Differences between income of farmers and other socio-economic groups have decreased prior to 2006. It seems that in 2007, in connection with a big increase in wages and economic income, the farmers' households income will not come closer to the average, despite the constant growth.
4. The increase of income in farmers' households resulted up to a great extent from subsidies from the European Union and state budget funds. In 2005 the production results in agriculture and price relations were poorer than in the previous year, and real income of farmers increased considerably.

⁹ It must be remembered that among farmer's households studied in the GUS study entitled "Household Budgets" there are units over 50% of income of which comes from an individual farm. The results of the latest agricultural census of 2002 show that only 1/3 of households using farms obtained their income only or mainly from agriculture (GUS, 2003).

In the years 2004-2006, over PLN 33 billion were allocated to rural areas, in the frames of different programmes. The money was paid by ARiMR.

5. Uneven division of resources received in the framework of the Common Agricultural Policy by different households in the analysed period has increased the diversity of income in the farmers' households group. It seems that on the one hand it increases the polarisation of farmers' households to two groups – one being economically strong and producing for the market, and the other one being a group of social households. On the other hand, subsidising households from the state and the EU budgets supports weaken households as well.
6. Although a considerable part of resources from direct subsidies has been allocated by farmers to investments, farmers' households equipment has improved in the analysed period. There are more durable objects, such as computers, mobile phones and cars (the biggest improvement among all types of households).
7. Although economic situation has improved in farmers' households, the opinions of farmers regarding benefits of joining the EU structures and direct subsidies are frequently critical and inconsistent. According to Pentor Institute the farmers have positive opinion about the influence of subsidies on income; however, according to the studies carried out by the European Integration Committee, the farmers' attitude towards subsidies is rather critical.

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The Impact of Governmental Policy on the Competitiveness of the Estonian Agricultural Sector¹⁰

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Abstract

In developed countries public policy measures in area of agriculture have specific aims arising from community's deficiencies. Through the support and regulation of agriculture the governments try to influence the social, regional, and ecological development of the country. Due to the complexity of the aims also the measures used to support the agricultural sector, and the influence of those measures are diverse and complicated. The aim of the present article is to assess Estonian agriculture's internal and international competitiveness' dependence on public policy. To reach this aim, at first the different strands of literature have been reviewed, by comparing and integrating different approaches. Comparative and trend analysis is the methodology used to analyse the changes in competitiveness of the agricultural sector over time.

In the 1990s Estonia chose different direction in supporting the agricultural sector and therefore got different results in the development of agriculture and country life. In several countries agriculture is heavily supported. As a result different countries have different conditions for agriculture and food industry. Mainly these differences exist due to the isolation countries have created for these sectors. Estonia's agricultural policy was somewhat contradictory until joining the EU. Governmental support measures for agricultural sector were implemented for the first time in 1998. Those measures covered very few products and the support level was quite low. The import tariffs against the third countries were not introduced until the year 2000. These tariffs were smaller than those of our main trading partners, and therefore could not neutralise the distorting effect of other countries' governmental intervention. Before Estonia became an EU member state, its agricultural and food industry had to compete on unequal terms with foreign enterprises both domestically and internationally. As a result the agricultural production in Estonia decreased dramatically in the 1990s. The unequal competition conditions in agriculture also affected negatively the regional development of Estonia, and through the low income level and rising unemployment rate the society as a whole. Currently the situation in agricultural sector has slightly improved due to the Common Agricultural Policy of the EU.

Key words: Competitiveness, international and internal competitiveness of industry, Estonian agriculture, Estonian foreign trade in agriculture

Introduction

Governmental policy has a task to guarantee coherence in the society and its development in the conditions of changing internal and external environment. It can be carried out by reacting to market failures and creating favourable conditions for positive processes and hindering negative ones. For the regulation of economic activities in domestic market the policy has to consider both: historic position and future needs of a country as well as social conditions, which form human development and cultural life, determining the identity of a nation. Foreign policy should provide the nation and country with sustainability of development taking the best possible advantages of globally available opportunities and neutralizing the effects of negative externalities that may harm the society.

The present article focuses on governmental policy and its impact on creating developing conditions for industry, especially for agriculture. Every industry has specific functions in economy and in society as a

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whole. In order to understand the position of a certain industry all of its relations with various sub-systems in society must be taken into consideration. Only a diverse and systemic treatment of all issues would make it possible to assess industry's development as a whole.

The aim of the present article is to assess the dependence of Estonian agriculture's internal and international competitiveness on the public policy. For achieving the aim the following issues are studied:

- the essence of agricultural policy determining the competitiveness of the sector;
- internal context of the Estonian agricultural policy, and
- international context of the Estonian agricultural policy.

To reach the aim the methods like review of the literature, including the systematization and comparison of different approaches, and comparative and trend analysis is exploited.

Essence of Agricultural Policy and Assessment of its Impact

Agricultural policy covers a broad area of support measures. First of all activities of a value chain from the agricultural production to marketing and food safety should be reviewed. Agriculture is closely connected with natural environment therefore agricultural policy should also be co-ordinated with environmental policy. Primary objective of the agricultural policy usually is providing its population with food. It means setting tasks to agricultural sector based on internal opportunities and considering external conditions.

Problems related to regional employment and economic development are often tried to be solved with agricultural policy. In order to achieve these goals the agricultural policy should be in accordance with social policy of the country. If a country's objective is for example to increase the efficiency of the agricultural production, it increases the amount of free workforce and therefore unemployment in rural areas. On the one hand the previous process creates free workforce that can be used in other economic sectors, but it needs efficient re-training and counselling system. On the other hand due to the limited mobility of the people the amount of persons needing social benefits might increase.

Compared to other industries, agriculture has certain specific characteristics (Tracy M., 1995):

- increase in income leads to the decrease of the food products' share in consumer's costs, which means relatively slower growth of agricultural products' demand compared to demand of the other goods and services;
- agricultural production influences the surrounding environment and therefore through the increase of environmental awareness, which bring along more strict environmental restriction, the costs of agricultural production will rise;
- slowness of changes in agricultural production makes it difficult to react to the changes in market conditions;
- companies involved in agriculture are due to their production structure relatively small, and therefore cannot change market conditions alone;
- high labour intensity of the agricultural production, seasonal factors, long working days, difficulties in co-ordinating work and leisure time;
- specific qualification of agricultural workforce creates limited mobility;
- indispensability and immobility of the land;
- relatively high need for capital due to the long cycle of agricultural production (low rate of turnover compared to the other industries);
- need of storage for agricultural inputs and outputs;
- location of the agricultural production on broad territory;
- dependence on weather conditions and related risk.

In securing agricultural enterprises and labour with income equivalent to other industries, the governmental agricultural policy has to neutralize negative effects caused by the specific characteristics of agricultural production. Leaving agriculture with its decreasing attractiveness in the influence of market forces brings along its neglect by investors and labour, also negative consequences to the social-economic situation and regional development of rural areas. In avoiding such developments the agricultural policy should implement support measures.

Agricultural policy is defined through complex set of state measures implemented for directing developments of agricultural industry. Agricultural policy may serve several objectives (Kaubi J., 1998):

- to increase income from agriculture and profitability;
- to supply population with high-quality and not too expensive agricultural products;
- to secure population with agricultural products in emergency situations;
- to keep agricultural production balanced through implementation of different support measures.

According to traditional approach agricultural policy can be divided into: income policy and structural policy. Through structural policy the country's regional and socio-economic problems are solved. Previous is not directly studied in the present article. However, income policy has a great effect on competitiveness of agricultural sector. Its objective is to balance agricultural markets and secure agricultural producers with stable and satisfying income level. The relevant measures are the following (Silberg U., 2001):

- development measures (credit policy, information policy and measures for product development);
- market measures (price policy, market policy, foreign trade policy and state intervention);
- support measures (direct and indirect support measures).

Competitiveness conditions of agriculture are most often distorted by the agricultural support and protection measures. Monetary transfers are made from the state budget to agricultural sector in order to increase competitiveness. Historical traditions and political parties of a country determine the size of these transfers and therefore they are different in different countries.

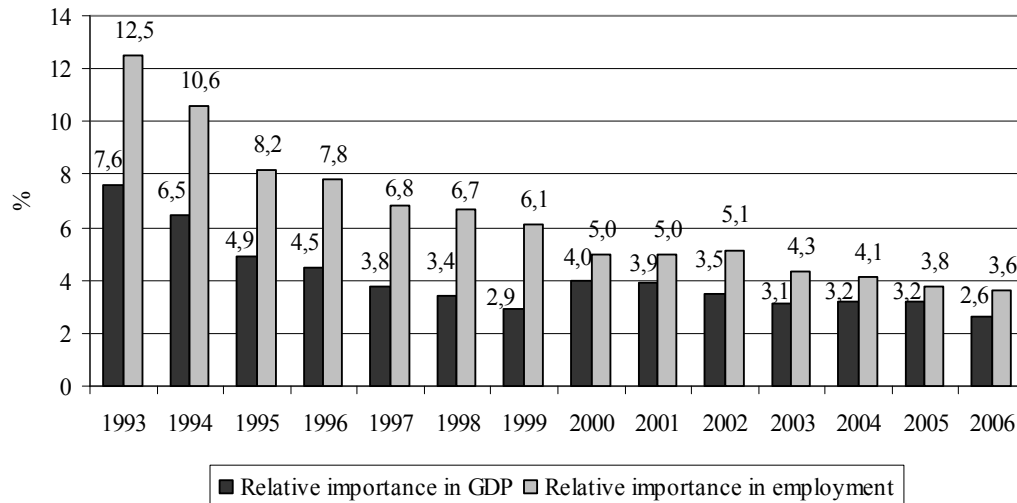
Budgetary subsidies to the agricultural producers enable to cover some of the production costs and reach the necessary profit margin at the lower price level if other production characteristics remain constant. Subsidies paid to producers are different in different countries. Due to the previous the producer's possibilities to compete at international markets on the bases of prices are different although the effectiveness to produce may be the same. Therefore there usually exist price distortions at the international markets for agricultural products. Products originating from countries with high level of budgetary support are successful in competing internationally, although their level of production costs may be higher than production costs of produce originating from countries with low level of budgetary support. So the producers from countries with high level of support can sell their products with lower price and still earn the profit necessary for the development.

In following subsections the internal and international competitiveness of Estonian agricultural sector will be discussed. Internal competitiveness will be analysed on the basis of the position of agricultural sector on factors' market. The international competitiveness will be analysed mainly on the basis of foreign trade data.

The Internal Competitiveness of the Estonian Agricultural Sector

The competitiveness level of an industry is described by its position vis-à-vis other industries in the national economy – its relative importance in the gross domestic product (GDP) and the creation of jobs. In Estonia, the relative importance of agriculture in the GDP and job creation has been decreasing (Figure 1) in the last decade. The GDP and employment indicators show that the Estonian agriculture sector has lost its former position in the national economy. While in 1993 the agriculture with hunting formed 7.6% of GDP, in 2006 the value of this indicator was only 2.6%. Also the relative importance of agriculture in employment has decreased from 12.5 in 1993 to 3.6% in 2006.

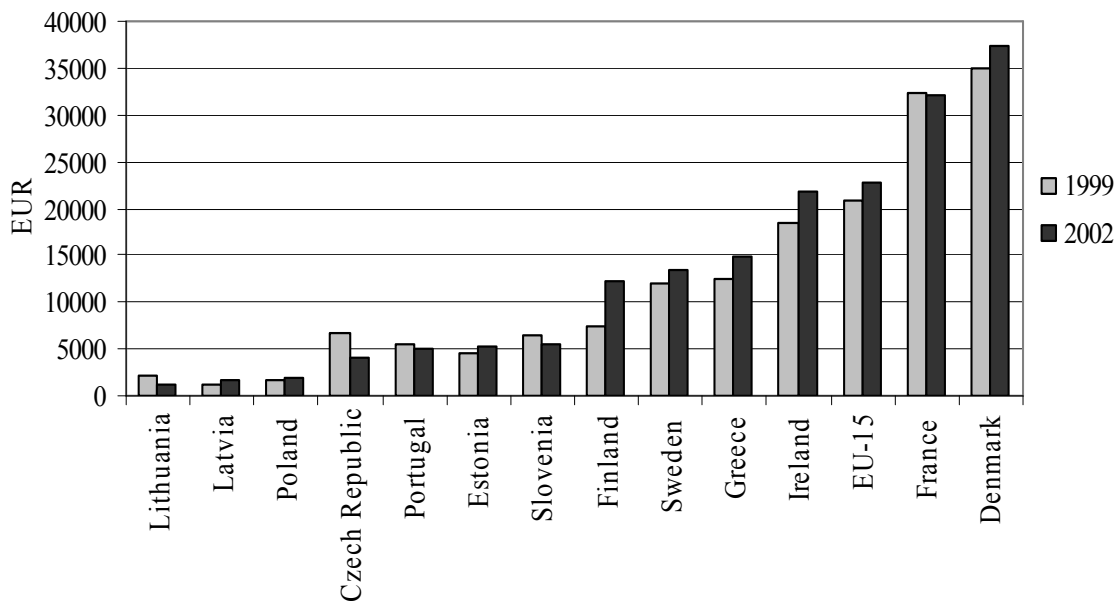
By comparison with other developing countries, in Estonia the decline in the relative importance of the agricultural sector was too rapid. The relative importance of agriculture in GDP in Estonia is equal to the relative importance of agriculture in the EU-15, although the general economic development level of Estonia is lower. In ten years the relative importance of the agricultural sector in GDP and employment decreased by two thirds. In the EU-15, the other sectors of economy grow faster than agriculture, but in Estonia the relative importance of agriculture decreased mainly due to the decrease in production volume.



Source: Statistical Office of Estonia, *online* database, composed by the authors

Figure 1. The relative importance of agriculture and hunting in GDP and employment in Estonia in 1993–2006

Regardless of the decrease in production volume, Estonia's indicators of efficiency and productivity in the agricultural sector are almost the highest among the CEE countries (Figure 2). This may be caused by a fast outflow of workers from the agricultural sector. At the same time, the productivity of a worker is higher in the old EU member countries than in Estonia.



Source: Basic data 2001, Basic data 2003, composed by the authors

Figure 2. Productivity in the agricultural sector (value added per worker)

If the important social functions of the agricultural sector (settlement of peripheral areas, employment in the countryside, landscaping, production of domestic food products, etc) are considered, the relative importance of this sector in GDP and in employment should be larger in Estonia. The experience of the developed countries shows the importance of agriculture in the creation and maintenance of economic activities in rural areas, where supportive services and manufacture making the area more attractive appear

around the agricultural sector. In comparison with the EU countries, GDP per capita level of Estonia is still very low. At the same time, the position of its agricultural sector in the national economy is similar to that of highly developed EU countries. It can be said that due to the complete openness and absence of the national support the Estonian agricultural sector has developed in an unusual way. The economic policy of Estonia was not similar to the economic policy of its main trading partners. It influenced the competitiveness of the agriculture negatively and brought along the stagnation of the sector.

Labour is the fundamental resource of modern economy, because the prices of labour differ across countries more than the prices of capital. Therefore, above all, an industry has to be competitive on the labour market. According to Bourge, an industry's attractiveness is influenced by factors like wage level, prestige, career opportunities, influence of the working conditions and pressure on the worker's health, political support to the industry, and development perspectives of the industry (Bourge S., 1994).

A qualified worker looks for a job where his/her abilities and skills are appreciated and he/she has good prospects to perform them in the long term. Also the occupation has to be acknowledged both by co-workers and society. The acknowledgement is primarily expressed by the wage level and future prospects. However, in the labour market, wage level only describes the competitiveness of an industry in relation to labour quality (Birkholz J., 1992). The high level of workers' education will guarantee the basis for long-term development (Bionas J., 1998). Rouskal also mentions the importance of a high level of education (Rouskal F., 1998). According to Rouskal, highly educated workers are primarily attracted by a high level of income, but the nature of the work and prestige of the position are also important (*Ibid.* 1998). The influence of prestige is different in the case of blue-collar workers, specialists, and managers.

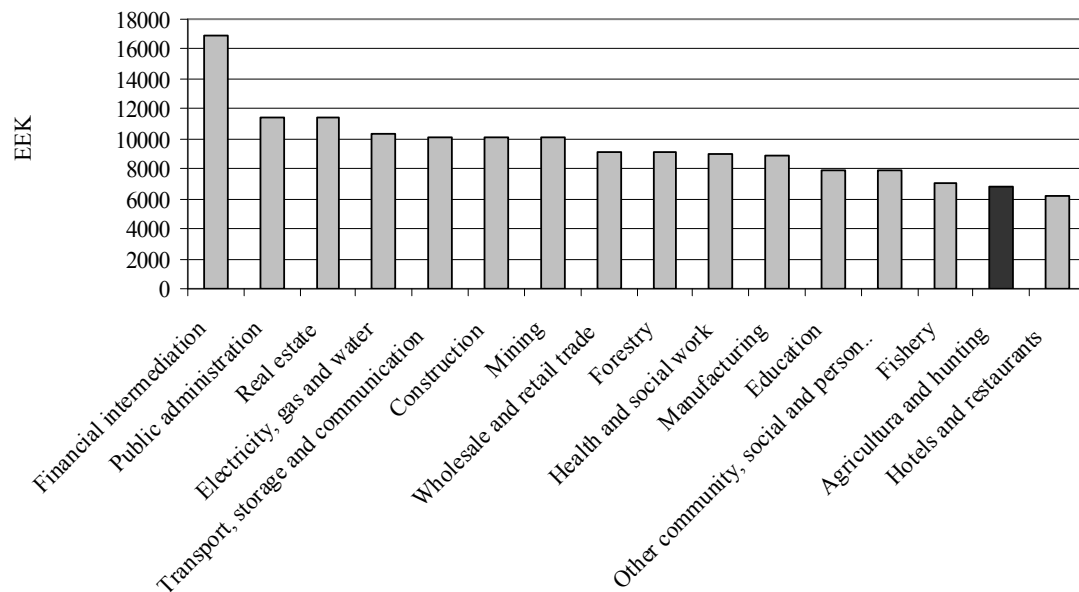
In the Estonian agricultural sector, over 100,000 jobs (about 75% of all jobs in agriculture) have disappeared over a span of approximately 10 years (Maaelu Arengu Kava). This has created a specific situation at the labour market in rural areas – the producers can employ a highly qualified worker for a rather low wage. Middle-aged people who have built a home in the countryside do not have enough mobility and possibilities to learn a new profession.

The wage level is lower in the agricultural sector than in the other industries in Estonia being approximately equal to or below minimum wages (Figure 3). The wage level of the agricultural sector has been lower than the average wage since 1992 when it formed 71% on average in Estonia. After that the difference has increased even more. Therefore finding young, motivated, and steady workforce is not easy in the countryside, and thus the competitiveness of the Estonian agriculture at labour markets has been constantly decreasing.

The opinions of the entrepreneurs engaged in the agricultural sector about their competitiveness are not uniform. Immobility of the labour force keeps older workers with specialised agricultural education in rural areas. At the same time, the problem of labour force will definitely sharpen in the future because young workers are needed to replace older employees.

In Estonia the government tries to avoid the rigid regulation of the labour market. Due to the previous the competitiveness of the weaker sectors is supported at labour market in short run. At the same time the low prestige and salary of the economic sector influences its level of competitiveness in the future because young people will not choose the area which does not assure wanted life quality to them. Hopefully better market conditions and budgetary support measures implemented due to the EU membership enable to improve the working conditions and increase the wage level in agricultural sector in Estonia.

Another precondition for an industry's successful development is its attractiveness to capital owners (competitiveness on the capital market). Investors consider all the factors influencing the success of the industry when allocating their monetary resources profitably and safely enough. An industry's attractiveness for investments is influenced by the factors like profit marginal of investments in the industry, entrance barriers, durability of the resources, market nature, existence of the qualified workers in the industry, political support to the industry, perspectives of industry, particularities of the previous investments (Bourge S., 1994).



Source: Statistical Office of Estonia, *online* database composed by the authors

Figure 3. Average monthly gross wages (salaries) by economic activity in Estonia in 2006

As capital is more mobile than labour, the development of an industry depends on its ability to attract capital. Governments can facilitate the movement of capital and increase the industry's ability to attract with its measures of the economic policy. In this case the FDI will become the measure of the industry's international competitiveness at the capital market. The competitiveness of an industry appears most rapidly at the capital market, because capital is the most mobile production input and investors are constantly looking for most profitable ways to invest.

In Estonia, almost all agricultural enterprises consider the low availability of capital as a problem. This is also seen from foreign direct investments (FDI) dynamics. In the period 2000–2006, the share of Estonia's agriculture in foreign direct investments dropped from 1.3% to 0.7%. It is known that agricultural enterprises have also troubles in getting loans from financial institutions, but unfortunately there is no adequate data to confirm this statement.

At the beginning of this century the pre-accession support measures of the EU played a significant role in agricultural investments. Through the SAPARD programme, almost a billion kroons of investments support reached the Estonian agricultural sector and food industry during the period 2000-2003 (Euroopa Komisjoni poolt...).

All enterprises in different industries need land for their activity. The industries which need more land are more vulnerable in the long run because the price of the land rises and so does the relative importance of land rent in production costs. The agricultural sector uses relatively more land than other industries, and therefore land-related problems mostly appear in agriculture (Harley M., 1996) In Estonia, the share of arable land in the total area of the country is quite low compared to other EU member states (Eesti Statistika aastaraamat ... 2002). On the other hand, due to low population density, the amount of arable land per inhabitant is quite high in Estonia compared to other countries but considerable amount of land is unused. In 2001, for instance, 24% of arable land was not used in Estonia (authors' calculations on the basis of "Põllumajandus ja maaelu areng ..." 2002). This is the highest level of that indicator in the EU (Põllumajanduse ja maaelu areng 2002). Consequently, there should be good conditions in Estonia for developing low-intensity production.

Despite its good supply of natural resources, qualified specialists and experienced employees, Estonian agriculture lost almost three quarters of its share in GDP and employment during the 1990s. One reason was the slower than average rise in the prices of food products due to the absence of an organisation of agricultural producers and the free import of subsidised products from the EU. Due to the low price level,

Estonian agricultural businesses had a very low return rate or even partly lost the value of the previous investments. This made them unattractive to foreign direct investments and enormously reduced their competitiveness at capital markets. The loss of the foreign and domestic markets to foreign competitors reduced the production of agricultural products. In Estonia, the competitiveness of the agricultural industry was mainly defined by foreign factors because of the free trade of the agricultural produce from Estonian side. The tariff-free import of agricultural products was unique in Europe.

The International Competitiveness of the Estonian Agricultural Sector

Internationally, industries primarily compete at output markets, while international competition at input markets is limited only to capital, because land is completely immobile and labour is relatively immobile. In 1992, when the Estonian kroon was introduced, the exchange rate was considerably undervalued. During the next years the fixed exchange rate (1 DEM = 8 EEK or 1 EUR = 15.6466 EEK) supported Estonia's export and protected its internal market against import. Estonian producers of agricultural produce could not exploit the situation because their Eastern markets were disappearing and Western markets were heavily protected with high import tariffs. Since the internal market of Estonia was also protected by the low exchange rate, the balance of foreign agricultural trade was positive until 1994. However, the inflation that followed the monetary reform increased the production costs and raised the prices at the internal market. In the agricultural sector, the costs of production rose faster than the prices. The monetary protection of the internal market vanished gradually, no safeguard measures of foreign trade (import tariffs, quotas, technical regulations) were implemented, and so the Estonian agricultural market opened to foreign competitors. The import volume of subsidised agricultural produce increased and Estonian producers were unable to compete with these goods on the basis of price. Since 1995, the balance of Estonian foreign agricultural trade has been negative.

After the collapse of the command economy Estonian agricultural producers could restore the export functioning under the conditions of the market economy to their traditional markets, such as the countries of the former Soviet Union. The most important target country for Estonian agricultural produce was Russia. In 1999, after the Russian crisis (in 1998 the rouble was devalued over 70%), export to Russia dropped significantly. Russia's share in Estonian agricultural export declined from 37.5% in 1995 to 3.9% in 2003 (Statistical Office of Estonia, *online* database) This sudden loss of the important target market caused serious problems to Estonian food processing industries because approximately 75% of agricultural produce was at that time exported to the former Soviet republics and Russia (Statistical Office of Estonia, *online* database). The food processing industries experienced significant economic difficulties and many of them went bankrupt. The Russian crisis also influenced agricultural producers because due to the crisis procurement prices also decreased remarkably and several farmers had to terminate production.

In 2000, the conditions of trade between Estonia and the rest of the world changed. The EU stopped the payment of export subsidies to the products that were exported to Estonia and increased the import quotas of some Estonian products which could enter the single market of the EU without import tariffs. In 2000 Estonia also implemented (according to the agreements with the EU) some import tariffs against the third countries because of the WTO member state status. Tariffs were introduced against countries which did not have free trade agreements with Estonia. But the influence of these measures was insufficient.

The indicators of an industry's international competitiveness are the comparison data of its foreign trade balance, market share, profit, and foreign direct investments. These indicators show the international position of a domestic industry relative to foreign industries (Frohberg K., Hartmann M., 1997)

Until accession to the EU, Estonia's historical export markets in Europe were virtually closed for entry by high economic barriers (import tariffs, budgetary subsidies). Before 2001, import quotas of the EU on Estonian food products at favourable tariffs were so small that investment in building up the production facilities as prescribed by the EU mostly proved economically unjustified. The food enterprises that adapted themselves to the EU standards often ran into economic difficulties and were taken over by foreign ownership.

Prior to the EU accession, only the comparatively small Latvian, Lithuanian and Ukrainian markets with low purchasing power were open to Estonian agricultural production. However Latvia and Lithuania can be considered as competitors to Estonia because of their structure and level of production, while penetration of Ukrainian market was essentially hampered by bureaucracy and the monetary barrier (cheap

grivna). At the same time, the positive effect of the absence of trade barriers is clearly evidenced by the fact that the open markets of Latvia and Lithuania could admit more Estonian agricultural goods than the EU market with its hundredfold greater purchasing power. The development of Estonian foreign trade in agricultural goods is presented in Table 1.

Table 1

Estonian foreign trade and production of agricultural goods, 1992–2005, million EEK

Year	Production	Export	Import	Foreign trade balance
1992	7 754.1	973.5	517.3	456.2
1993	6 837.5	2 498.6	1 741.0	757.6
1994	5 956.5	3 378.6	3 010.7	367.9
1995	5 967.7	3 113.2	3 774.4	-661.2
1996	5 588.9	3 223.0	5 023.7	-1 800.7
1997	5 505.5	3 387.6	6 213.4	-2 825.8
1998	5 230.7	3 448.5	6 248.1	-2 799.6
1999	4 801.1	2 640.8	5 446.0	-2 805.1
2000	5348.1	3 189.3	6 174.9	-2 985.6
2001	6022.1	4 636.1	7 062.1	-2 426.0
2002	5942.8	4 713.2	7 681.9	-2 968.7
2003	6051.9	4 703.3	8 215.3	-3 511.9
2004	6673.9	5 592.5	9 582.6	-3 990.1
2005	7293.0	6 950.1	10 985.9	-4 035.8

Sources: the database of the Estonian Ministry of Agriculture; Statistical Office of Estonia *online* database; Eesti Statistikaameti aastaraamat 2000; Väliskaubandus 2005; Põllumajandussektori 2006. aasta ülevaade 2007

During the period 1992–1994, the Estonian market was protected by the devalued Estonian kroon, but due to its high inflation rate this protective mechanism had already been largely removed by 1995. In 1995 the foreign trade balance in agricultural goods turned negative, and the negative balance increased rapidly. In 1998 Estonia introduced direct subsidies to its agriculture, supporting dairy and grain farmers. In this year the growth rate of negative trade balance was non-existent until 2003 when increase began again. The influence of foreign trade on the production of the traditional Estonian agricultural articles – milk and meat – is illustrated by the 1990–2006 data on the dynamics of production, export, import, and consumption (Tables 2 and 3). As can be seen in Table 2, by 1993 the consumption of dairy products per capita had dropped by more than 45% annually compared to 1990 (from 502 kg to 272 kg), starting to increase again from 2000. By 2002 milk production had decreased by half in comparison with 1990, reaching 611.6 thousand tonnes and remaining at that level until 2003 when new increase started.

Compared to 1990, by 1993 the consumption of meat per capita had decreased by a third (from 78 kg to 51 kg) in Estonia (Table 3). During the same period, the export volume of meat had dropped by nearly 80%; even though the volume of import was substantially smaller, it meant in summary that meat production had dropped from 182.2 thousand tonnes in 1990 to 83.7 thousand tonnes in 1993. The trade balance after 1993 has always been negative. Compared to 1993, the import volume of meat products had grown more than ten times by the year 2006, while the volume of export has fluctuated, notwithstanding a rise in the level of consumption by approximately 50% during the same period.

Table 2

Production, export, import and consumption of milk in Estonia in 1990–2006

Year	Production (th. t)	Import (th. t)	Export (th. t)	Foreign trade balance (th. t)	Per capita consumption (kg)
1990	1208.0	27.9	357.4	329.5	502.0
1991	1092.8	0.6	352.9	352.3	409.0
1992	919.3	5.0	243.0	238.0	351.0
1993	807.1	26.0	390.0	364.0	272.0
1994	771.8	50.0	335.0	285.0	274.0
1995	706.9	150.0	335.0	185.0	295.0
1996	674.8	210.0	440.0	230.0	269.0
1997	717.1	380.0	620.0	240.0	280.0
1998	729.5	264.0	523.0	259.0	284.0
1999	626.1	77.1	248.1	171.0	276.0
2000	629.6	44.3	171.8	127.5	286.0
2001	684.0	42.7	228.5	185.8	324.0
2002	611.6	114.5	248.5	134.0	325.5
2003	611.5	263.8	261.6	-2.2	338.4
2004	652.4	120.0	284.0	164.0	329.0
2005	670.4	37.0	287.0	250.0	326.0
2006	690.3	26.0	274.0	248.0	316.0

Sources: the database of the Estonian Ministry of Agriculture; Statistical Office of Estonia *online* database.

The years 2001–2006 are characterized by the increase in consumption, import and export volumes. In 2006 the consumption has reached almost the initial level of 1990.

Table 3

Production, export, import and consumption of meat in Estonia in 1990–2006

Year	Production (th. t)	Import (th. t)	Export (th.t)	Foreign trade balance (th.t)	Per capita consumption (kg)
1990	182.2	1.6	57.0	55.4	78.0
1991	151.8	0.1	56.0	55.9	60.0
1992	107.9	0.6	12.0	11.4	59.0
1993	83.7	4.5	11.7	7.2	51.0
1994	69.4	15.0	8.5	-6.5	50.0
1995	67.7	16.0	10.0	-6.0	50.0
1996	58.6	30.0	5.5	-24.5	54.0
1997	53.4	29.9	6.4	-23.5	53.0
1998	60.0	30.7	9.6	-21.1	56.0
1999	61.1	40.3	9.3	-31.0	60.0
2000	53.3	42.4	9.6	-32.8	63.0
2001	57.3	45.8	16.5	-29.3	62.1
2002	70.8	41.9	16.1	-25.8	65.8
2003	70.1	46.5	20.4	-26.1	67.3
2004	71.3	41.8	17.7	-24.1	69.5
2005	69.7	45.9	18.8	-27.1	70.1
2006	72.4	50.6	19.6	-31.0	70.3

* All exported and imported meat products have been calculated in terms of meat

Source: the database of the Estonian Ministry of Agriculture; Statistical Office of Estonia *online* database.

The self-sufficiency level of agricultural products shows the sector's excess capacities in Estonia. In the old EU member states with a lower production potential the self-sufficiency level of the main agricultural

products is over 100% (Table 4). In Estonia, on the other hand, only the self-sufficiency levels of milk and cereals are quite good. If the important social functions of the agricultural sector (settlement of peripheral areas, employment in the countryside, landscaping, production of domestic food products, etc) are considered, the relative importance of this sector in GDP and in employment should be larger in Estonia.

Table 4

The self-sufficiency level in CEEC, EU-15 and Estonia (the share of domestic production in consumption, %)

Country	Cereals	Milk	Beef	Pork	Poultry
CEEC	93	107	108	101	107
EU-15	116	108	103	110	109
Estonia	95	135	81	67	28

Sources: Hein, Maadvere 2002: 3, Self-sufficiency ... 2001, Pouliquen 2001: 10

Due to the great share of imported goods at the market, Estonian producers have lost in economies of scale that can help lower the unit cost of production. In addition, the inflow of subsidised and cheap import articles brought about an abnormally low level of prices of agricultural products before 2004. In the last few years the situation has somewhat improved thanks to the EU pre-accession investment assistance, abolition of export subsidies, greater export opportunities and implementation of the Common Agricultural Policy after joining the EU.

Conclusions

The competitiveness of an industry is a very broad and complex concept for analysing the development of the sector and country. Competitiveness of industry is directly influenced by the internal and foreign policies of a country. To evaluate and express the competitiveness of an industry different authors have used industry's position in the national and international economy. Indicators like the sector's share in GDP and employment, and trends in foreign trade have been used in the study.

The relative importance of the Estonian agricultural sector in GDP and employment has gradually been decreasing since the 1990s because of unequal economic conditions compared to the main competitors. This is describing the decrease in internal competitiveness of Estonian agricultural sector compared to other sectors.

The internal competitiveness of the agricultural industry appears mainly at resource markets. Therefore industry's ability to attract the necessary resources is analysed to evaluate the sector's competitiveness. Estonian agricultural sector has a good natural resource base. Unfortunately, due to reforms and unfavourable conditions of economic policy, almost a quarter of arable land is not in use. The low profitability caused a decrease in the competitiveness of the agricultural sector at other resource markets though.

The agricultural support measures used by Estonian main trading partners had been higher than in Estonia. Therefore Estonian agricultural producers' foreign rivals have had a competitive edge both at their home market and the Estonian market. The international competitiveness can be evaluated on the basis of foreign trade dynamics of the main agricultural products (milk and meat). It could be stated that the situation in Estonian foreign trade influenced greatly the development of the Estonian agricultural sector. Systematic changes in production and foreign trade of agricultural products came from the Estonian public policy and policy measures of the main trading partners. Estonian agricultural sector lost over half of its production volume due to the worse competition condition.

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Regional Economic Development: Theory and Practice in Poland

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Abstract

The paper is logically divided into two parts: part one being a theoretical analysis and part two empirical. The underlying theoretical framework covers the main concepts and theories as well as key measures of economic development. In Section 2 the regional disparities in economic development level in Poland during the period of 1997-2006 are presented on the basis of national statistical data and empirical findings. Statistical framework for the assessment of regional development based on the factor analysis is proposed by the author, who has applied this method to produce a composite indicator of economic development, and to make regional development classification of Poland.

Key words: economic development, composite indicator, regional disparities, Poland

Introduction

This paper presents the economic development issues in light of selected economic theories, describes the main indicators of economic development but generally focuses on empirical evidence, i.e., on economic development in the regions of Poland which was assessed by using composite indicator proposed and constructed by the author.

The paper emphasises on broad-based economic development in the regions of Poland for two reasons. Firstly, the author believes that one way of fostering rural development is through regional economic development. Secondly, national or EU rural economic development programmes tend to be targeted versions of broader state and the EU economic development strategies. The rationale for research was to contribute to theoretic-methodological studies on economic regional differentiation.

The paper has two main parts: theoretical and empirical. A good starting point of the research is to define economic development, since even the economists do not agree on a single definition. Moreover, in the first part key theories on economic development (classic theories of Adam Smith, David Ricardo, Thomas Malthus and John Stuart Mill), Marx's concept, Schumpeter's theory of economic development, Rostow's theory of the stages of economic development) are reviewed. Afterward, the most frequently used indicators of economic development like Gross Domestic Product per capita, the Economic Vulnerability Index (EVI), the Human Assets Index (HAI) and the Human Development Index (HDI) are presented in the research.

Following this, on the basis of statistical data and empirical findings, the spatial disparities in economic development level in Poland during the period of 1997-2006 are shown in the second part.

Research aims and methods applied

The main aim of this article is to review the most influential economic theories of economic development, to present the most common measures of economic development, and to assess the development level of Polish economy divided into macro-regions and voivodships (16 regions that correspond to the EU NUTS II level) during the period 1997-2006 through applying the composite indicator built by the author.

The paper is based upon extensive theoretical and empirical literature review and national statistics provided by the Central Statistical Office of Poland (GUS). Data describing economic development were used to present conceptual framework to construct and measure the composite indicator of economic development. The chosen macroeconomic variables are summarized in Table 1.

The study relies on 'factor analysis' methods to identify economic variables that display the greatest contribution to the level of economic development (Jajuga K., 1993; Ostasiewicz W., 1999; Dobosz M., 2001; Soares J.O. et al., 2003). The Kaiser criterion and "Scree plot" approach were used to extract the most important variables or to drop the least important factors affecting the development. Merely factors with eigenvalues greater than 1 were retained (Aczel A.D., 2000).

The following formulas were applied to determine the estimators of principal components (1) and the estimators of composite indicators (2) of economic development in macro-regions and voivodships:

$$U_k = a_{1k}x_1 + a_{2k}x_2 + a_{3k}x_3 + \dots + a_{nk}x_n \quad (1)$$

where:

U_k – estimate for k -principal component, $k = 1, 2, \dots, t$,

a_{ik} – estimated weights of i -contributions for k -principal component,

x_i – value of i -contributions, $i = 1, 2, \dots, n$.

$$W_s = b_1U_1 + b_2U_2 + b_3U_3 + \dots + b_tU_t \quad (2)$$

W_s – interpreted here as a composite indicator of economic development,

b_k – estimated weights of k -principal component, $k = 1, 2, \dots, t$,

U_k – value of k - principal component, $k = 1, 2, \dots, t$.

The next step was to determine an impact of the types of voivodships and macro-regions on the level of economic development. The methodological framework is provided here by one-factor ANOVA analysis. LSD test was applied to assess differences between means for groups of each factor (Stanisz A., 2000; Borkowski B. et. al, 2004).

Concepts of economic development

As a notion, economic development can be perceived as a complex multi-dimensional concept involving improvements in human well-being, however defined. In general terms, economic development refers to the creation of wealth through the mobilization of financial, physical, human, and natural resources to improve the economy and quality of life in a particular geographic area, which can be as large as a whole nation state or as limited as a region or even metropolitan area.

Different scientists have framed various definitions of economic development. For Karl Marx, the main representative of the historical materialism school, economic development was tied to class struggle. According to him, economic development means the cumulative transformation of quantitative into qualitative changes (accumulation of quantitative changes can lead behind certain threshold to a qualitative change). Marx writes: “Merely quantitative differences, beyond a certain point, pass into qualitative changes” (Marx K., 1906). For him economic development means also the improvement of society, state and economy.

Jan Drownowski (1996) pointed out that “Development is a process of qualitative change and quantitative growth of the social and economic reality which we call either society or economy. Because of the close interrelation of economic and social elements no purely social or purely economic development is possible. Consequently, it is better not to speak of social development separately. It is a single process which is best called simply development”.

The approach of Francois Perroux a French economist places the notion of development in a wider (holistic) context. For him, development means “the combination of mental and social changes within a population that enables it to increase, cumulatively and permanently, its total real production” (Perroux F., 1961).

Many authors lay emphasis on the political, social and cultural aspects of development. One of them is Ryszard Piasecki (2003) a Polish economist, who considers economic development as a wide concept including qualitative elements and consisting of changes in the area of economy, politics, culture, institutional system, ecology, techniques and technology.

Economic development in the light of selected theories

For more than 200 years researchers around the world have been trying to answer the key question: Why are some countries rich and some countries poor? Economists throughout history have spent a lot of time and efforts to seek the solution to this problem, trying to find a way to put less wealthy countries on the path to stable development. They have developed many theories about essential conditions and potentials for economic development. However, variety of economic, political and cultural circumstances in different countries, difficulty of defining the phenomenon as well as judging opinions of researchers caused, all together, that formulated theories of economic development are inconsistent, unclear and confused (Piasecki R., 2003). Alternative theories are often competing in nature but each proposes valuable insight into the development process.

Classical theories of economic development

Prominent classical economists like Adam Smith, David Ricardo, Thomas Malthus and John Stuart Mill emphasized the importance of technological progress as the key to economic development. According to them, technological progress enables effective division of labour (specialisation) which results in increased productivity of labour. Similar to the modern economists, the classical economists regarded capital accumulation as a necessary condition for the economics of development. Division of labour leads to capital accumulation, and capital accumulation leads to the economics of development. The classical theorists

shared a concern for interrelation between profits and population growth. They inferred that the higher the standard of living becomes, the faster population grows. They believed that rising profits would result both in higher employment and increase in the wages fund (a fund out of which the capitalists pay wages to workers). This would lead to higher wages stimulating workers to expand the size of their families (Spengler J.J., 1976; Kamerschen D.R. et al, 1999). Higher population would cause the profit erosion resulting in slowing down economic development.

For classical economists, natural resource limitations, particularly of land, were at the heart of the problem. They argued that in order to feed growing number of human population, farmers would have to intensify the use of more fertile land and gradually expand the amount of land under cultivation by the use of marginal land. As a result of decreasing returns to the land, prices and consequently the labour costs would rise. Assuming that profits are the main source of capital accumulation, the falling rate of profit would lead to a slowdown in capital accumulation. To avoid such situation, technical progress should be steady (Kamerschen D.R. et al, 1999).

Marxian theory of economic development

A predominant theme in Karl Marx's writings is the study of capitalism. Marx believed in 'economic determinism'¹¹. Marx puts it into the words: "the mode of production of material life conditions the social, political and intellectual life process in general" (Marx K., 1971).

Like the classic economists, Marx thought that economic development depended on technological progress. In Marx's analysis, capitalism was the first mode of production in which the ruling class gained and held power through purposely introducing new technologies of production. He used his economic variables: technology, productive forces, and mode of production in understanding the evolution of society (Hodges D.; Gandy R., 1982). For Marx, akin to classical thinkers, economic development is directly linked to profit and capital accumulation. Profits are the only source of capital accumulation. In Marx's model, technology pushes wages to subsistence, not population growth as in the theories of the earlier classical economists.

Marx argues that the stable replacement and further accumulation of capital is entirely owing to the labourer's exertions. He claims that the value of a commodity can be objectively measured by the average amount of labour hours that are required to produce that commodity. Marx sees a direct relationship between capital accumulation, productivity and the wage rate. He suggested that over time, capitalists would invest more and more in new technologies, and less and less in labour. If productivity increases faster than wages, but production continues to be concentrated in the types of goods normally bought by wage-earners, people are unable to afford to buy what the economy produces – there will be an under-consumption or overproduction crisis. According to Marx, the value of labour power cannot be reduced either to the classical school's bare minimum subsistence or a 'physically' determined minimum (Ramirez M.D., 2007). Otherwise, it would cause decrease in consumption and finally economic crisis. A major economic crisis would eventually open the way to socialism.

Schumpeter's theories of innovation and entrepreneurship

Joseph Schumpeter is an author of an original concept of economic development consisting of two theories: theory of innovation and theory of entrepreneurship. According to him "By development we shall understand only such changes in economic life that are not forced upon it from without, but arise by its own initiative from within" (Schumpeter J.A., 2002).

Schumpeter argues that innovation (what he also calls a new combination) is the fundamental phenomenon of economic development. He first described the motor of the development as the innovation itself in his famous "*The Theory of Economic Development*" (Schumpeter J.A, 1911, 1934). He was among the first to design a clear concept of entrepreneurship. Schumpeter introduces the term 'entrepreneur' for the economic actor who causes development. He distinguished inventions from the entrepreneur's innovations. He pointed out that entrepreneurs innovated, not just by figuring out how to use inventions, but also by introducing new means of production, new method of production, new products, new forms of organization (e.g. by establishing a large corporation), and by the opening up a new market (Schumpeter J.A, 1950;

¹¹ The doctrine which maintains that history can be explained in terms of laws of economic development, and that the economic foundations of society act as historical determinants which place the economy at the centre of the development of society.

Kundera E., 2004).

Schumpeter stated that “Entrepreneurship incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one” (Schumpeter J., 1982). He described this as a process of ‘creative destruction’ which drove economic development.

Schumpeter distinguished three phases in economic development: (1) economy under static (stationary) system, i.e., pre-capitalistic, (2) proper capitalism with bourgeois values, and (3) demise of capitalism (Kundera E., 2004). Using historical and statistical material and basing on the theoretical framework developed in his earlier writings, Schumpeter analysed actual process of economic development, including fluctuations. In his great work “*Business Cycles. A Theoretical, Historical and Statistical Analysis of the Capitalist Process*” (1939) he distinguished three cycles within the economy: a long, 45-60 years cycle (a Kondratieff cycle), a moderately long, 9-11 years cycle (a Juglar cycle), and a short, 40 months cycle (a Kitchin cycle). Each business cycle has four distinct phases: prosperity, recession, depression and revival.

Different business-cycle researchers look for different reasons of cyclical fluctuations in economy. They indicate both exogenous (coming from outside an economic system) and endogenous (arising from within a system) factors. Schumpeterian business cycles are built on an endogenous mechanism of growth and fluctuations, which is based on the endogenous introduction of new products determined by the set of technological opportunities.

Rostow’s theory of the stages of economic development

The theory of Walt Rostow (1960) an American economic historian hypothesises five basic stages of economic development:

1. Stage 1 – ‘*Traditional society*’: Economy dominated by subsistence activity, production limited to agriculture that is the most important industry, resources concentrate in agriculture (agricultural employment equals to 75%), productivity of labour is low, hierarchical social structure;
2. Stage 2 – ‘*The preconditions for take-off*’: There is an appearance of stable and systematic changes. Expansion of trade and manufacturing. Beginnings of entrepreneurs prepared to take risks for the sake of profits either in financial or productive activities. Increased specialisation generates surpluses for trade. The main role is played by the leading sector of economy that has to initiate take-off.
3. Stage 3 – ‘*Take-off*’: The passage of a traditional to a modern economy. About 20-30 years in duration. Rapid increase of industrialisation: workers switch from the agricultural to the manufacturing sector. Evolution of new political and social institutions that support the industrialisation. The growth is self-sustaining as investment leads to increasing incomes in turn generating more savings to finance further investment. The society is driven more by economic processes than traditions.
4. Stage 4 – ‘*Drive to maturity*’: Refers to the need for the economy itself to diversify into new areas. Technology extends and provides a diverse range of investment opportunities. Increase in skilled and professional workers. The economy is producing a wide range of goods and services and there is less reliance on imports. This diversity leads to rising GDP and standards of living, as the society no longer needs to sacrifice its comfort in order to strengthen certain sectors.
5. Stage 5 – ‘*Age of high mass consumption*’: GDP per capita has increased to the level that provides purchasing power beyond that of basic necessities – the economy is geared towards mass consumption. The consumer durable industries flourish. The service sector becomes increasingly dominant. Some states (the USA, Great Britain, France, Sweden, Switzerland, Japan and Canada) moved into this stage at the end of the fifties of 20th century.

Alternative measures of economic development

According to some economists, the economic growth is an obvious measure of economic development (see for example Ford G.S. and Koutsky T.M., 2005). Beyond doubt, economic development links strongly with economic growth. The latter is a necessary but insufficient condition for economic development. Economic growth is simply measured by the annual percentage rate change in a nation’s Gross Domestic Product (GDP) or increase in per capita GDP. The economic development is far more comprehensive. It involves progressive changes in the socio-economic structure of a country. Most commonly used measures of economic development include: GDP per capita, an occupational structure of the labour force (primary activities like agriculture, secondary activities, i.e., manufacturing, and tertiary activities, i.e., services), consumption per capita, population growth, urbanisation, infrastructure, social conditions (ex., life

expectancy, literacy rate, health care, infant mortality).

Consequently, economic development is relevant to a steady decline in agricultural shares in GDP and employment, continuous increase in shares of industries and services as well as changes in technological and institutional organization of production and in distributive pattern of income.

The most popular indicators of economic development are presented below.

Gross Domestic Product per capita

Gross Domestic Product is the basic measure of the economic performance of any country or region. However, it has some limitations: it is measurable in money terms – it does not measure welfare as such, it also does not account for the social and environmental costs of production; it therefore is not a good measure for the level of overall well being. GDP is also not considered a good indicator of comparative living standards between countries over time. There are states, where high level of global GDP is accompanied by low level of the living standard of population (Piasecki R, 2007). Such countries like India, China and Brazil are here examples. Opposite situation is visible in some European countries like Sweden, Belgium and Luxembourg. For the above reason, international comparisons of welfare often use the measure of GDP per capita. In order to take into account both variations of price levels between countries and exchange rates variations, GDP per capita in purchasing power standard (PPS) is commonly used (Wozniak M.G, 2002).

Economic Vulnerability Index (EVI)

The next indicator used to assess the level of economic development and possible effects of the shocks on economic performance (i.e., economic vulnerability) is Economic Vulnerability Index. Many its versions were produced for measuring the economic vulnerability with special reference to small island developing states (Briguglio L., 1997; Crowards T. 1999). The UN Committee for Development Policy uses the following variables that compose the single index: Merchandise export concentration, Agricultural production instability, Goods and services exports instability, Population size, Share of manufacturing and modern services in GDP.

Human assets index (HAI) and Human development index (HDI)

The human assets index (HAI) provides information concerning the level of development of human capital. It is a combination of four indicators: two of nutrition and health, i.e., the percentage of population undernourished (calorie intake as percentage of nutrition requirements) and the mortality rate of children aged five years or under (per 1,000 live births), and two for education, i.e., gross secondary school enrolment ratio and the adult literacy rate.

GDP per capita, the EVI and the HAI are used as criteria for designating a country as least developed. In order to be eligible for graduation from the category of LDC, a country must no longer meet two of the three mentioned criteria (if the criteria were to be applied symmetrically, not meeting one single criterion would be enough for a country not to be considered an LDC). To be added to the list, a country must satisfy all three criteria (see for details UNDP, 2004).

Another broad indicator of economic development is the United Nations Human Development Index (HDI). It measures the average achievements of a country in three basic dimensions of human development: a long and healthy life, knowledge, and a decent standard of living. Before the HDI is calculated, an index for each of these dimensions is created. Then, the HDI is calculated as a simple average of three indices: 1) Life expectancy index (life expectancy at birth); 2) Education index: Adult literacy index (adult literacy rate) and Gross enrolment index (gross enrolment ratio); 3) GDP index (GDP per capita in Purchasing Power Parity terms in US dollars). The index is expressed as a value between 0 and 1 (see for details UNDP, 2008).

Assessment of regional development in Poland: results and discussion

To assess the regional development in Poland, the author compounded the selected observed variables (Table 1) into a unified measure – an aggregate (composite) indicator being an instrument of regional development classification.

Table 1

Factors determining regional differences in economic development in Poland, 1997-2006

Variable description	Aggregate factors - 85.6% of variability			
	Factor 1	Factor 2	Factor 3	R ²
Share in variability (%)	60.29	14.73	10.54	
1. Gross Domestic Product per capita	0.802	0.396	0.004	0.800
2. Gross Value Added per employee	0.518	0.116	0.246	0.342
3. Gross Value Added in agriculture per employee	0.112	-0.053	0.518	0.283
4. GVA in manufacturing and construction per employee	0.000	0.210	0.274	0.119
5. Gross Value Added in services per employee	0.200	0.767	-0.077	0.635
6. Income per habitant	0.304	0.429	0.036	0.278
7. Average salary	0.314	0.595	-0.021	0.453
8. Investments per capita	0.695	0.449	0.005	0.685
9. Unemployment rate	-0.459	0.029	0.174	0.242
10. Employment in manufacturing	0.023	-0.420	-0.049	0.180
11. Agricultural production per 1 ha UAA	-0.033	-0.011	0.286	0.083
12. Self-government's (gmina's) spending per habitant	0.583	0.149	0.316	0.461
13. Self-government's (gmina's) income per habitant	0.424	0.224	0.450	0.432
14. Entitles of national industries registered in REGON	0.187	0.582	0.179	0.405

Notes: R² – the square of coefficient of multi-way correlation between variable X_i and main factors U₁-U₇; X_i – value of *i*-primary variable, *i* = 1,2,...,14; U_k – value of *k*-main factor, *k* = 1, 2, 3.

Source: *Own research*

Preliminary exploratory factor analysis enabled to identify the smaller number of development factors. Three of seven were selected in Table 1 as having the strongest contribution to economic development. These together explain 85.6% of variability. For the first factor, GDP per capita and investments exhibited the strongest contribution to economic development. For the second and third factors, GVA per employee in services and GVA per employee in agriculture exerted the strongest influence. Table 2 reports the one-factor ANOVA results which indicate statistically significant impact of all considered factors on economic development with respect to voivodship and macro-region.

Table 2

Factors' contribution to the level of composite development indicator for Poland in 1997-2006

Specification	Impact of factor	
	Voivodship	Macro-region
Composite indicator	F=24.39 ^x	F=28.74 ^x

Note: value F - Fisher-Snedecor test; x – statistically significant factor's impact on explained variable at $p \leq 0,05$.

Source: *Own research*

As it is presented in Table 3, the most developed voivodships, with the highest value of composite indicator, include: Mazowieckie, Dolnoslaskie and Pomorskie. The least favourable values are observed for Podkarpackie, Lubelskie and Swietokrzyskie voivodships.

More progressive voivodships are characterized by high level of industrialisation. Considerable importance in their development is played by large metropolitan areas with such municipalities as Warsaw in Mazovia (mazowieckie), Wroclaw in Lower Silesia (dolnoslaskie), and the so called Three Cities on the south coast of the Baltic Sea, i.e., Gdansk, Gdynia and Sopot (pomorskie). In those voivodships, the levels of GDP per capita, income, and investments are well above the national average, and unemployment rate is relatively low. Just opposite situation is observed in voivodships with low levels of composite indicator which are predominantly high-unemployment voivodships, with backward economic structures and fragmented agriculture.

Table 3

The levels of composite indicator of economic development for Polish voivodships in 1997-2006

Voivodship	Composite indicator of economic development		
	n	\bar{x}	$s_{\bar{x}}$
<i>Mazowieckie</i>	10	1.89 e	0.14
<i>Dolnoslaskie</i>	10	0.77 d	0.23
<i>Pomorskie</i>	10	0.73 d	0.31
<i>Zachodniopomorskie</i>	10	0.61 de	0.39
<i>Slaskie</i>	10	0.47 e	0.19
<i>Wielkopolskie</i>	10	0.41 e	0.21
<i>Lodzkie</i>	10	-0.33 cd	0.20
<i>Opolskie</i>	10	-0.01 def	0.34
<i>Kujawsko-Pomorskie</i>	10	-0.26 cde	0.26
<i>Malopolskie</i>	10	-0.61 cd	0.21
<i>Warminsko-mazurskie</i>	10	-0.73 bcd	0.24
<i>Lubuskie</i>	10	-0.78 abcd	0.28
<i>Podlaskie</i>	10	-0.87 abc	0.24
<i>Świętokrzyskie</i>	10	-1.27 ab	0.24
<i>Lubelskie</i>	10	-1.28 ab	0.18
<i>Podkarpackie</i>	10	-1.46 a	0.26
1997-2006	160	1.78E-06	-

Notes: n – sample number, \bar{x} - average level of the indicator. An occurrence at least one identical letter in two compared groups indicates no significant difference between them at $p \leq 0.05$; $s_{\bar{x}}$ – standard error of the average.

Source: *Own research*

The differences in the economic development among macro-regions of Poland are shown in Table 4. The best developed are capital, central and northern macro-regions, while the less developed are south- and central-eastern macro-regions. Macro-regions generally display differences in composite indicator levels for the similar reasons as in the case of those differences amongst voivodships.

Table 4

The levels of composite indicator of economic development by Polish macro-regions in 1997-2006

Macro-region	Composite indicator of economic development		
	n	\bar{x}	$s_{\bar{x}}$
<i>Capital</i>	10	1.56 d	0.15
<i>Central</i>	10	0.70 c	0.18
<i>Northern</i>	10	0.70 bc	0.32
<i>Southern</i>	10	0.31 bc	0.16
<i>North-western</i>	10	0.27 bc	0.18
<i>Central-western</i>	10	0.09 b	0.16
<i>South-western</i>	10	-0.44 abc	0.66
<i>North-eastern</i>	10	-0.87 a	0.18
<i>South-eastern</i>	10	-1.20 a	0.14
<i>Central-eastern</i>	10	-1.24 a	0.20
1997-2006	100	1.78E-06	-

Note: Symbols as in Table 3

Source: *Own research*

Relatively high per capita investments and habitants' earnings as well as growing share of services in economies of better developed macro-regions stimulate their further economic growth. In contrast, south- and central-eastern macro-regions are typically agricultural (with semi-subsistence agriculture) with low levels of investments, population incomes (mainly from agriculture) and the slow process of industrialisation. From the modernisation perspective, semi-subsistence farms are often regarded as a major

obstacle to development. Expanding farm businesses, to include agritourism in rural areas, has the potential to reverse negative economic trends in those macro-regions. Moreover, the EU funds, providing their proper management and administration, could act as a powerful incentive to encourage this development.

Concluding remarks

1. Fast changes taking place in the contemporary world cause those traditional theories of economic development might be insufficient to explain the economic development of different countries. Even most influential theories offer old-fashioned explanations, since they are based on historical experience. Besides, they provide theoretical generalisations and often implicitly assume that there is one universal path of economic development.
2. Economic development refers to long-term changes in systems of production and distribution of goods and services affecting human welfare, and means both quantitative and qualitative changes. It seems that economic development assessment should take into consideration wider range of characteristics such as demographical processes, ecology, innovations, research and development, society and market institutions (formal and informal), political institutions, etc.
3. The research results demonstrate that in the period 1997-2006 the highest levels of economic development, as measured by the composite indicator constructed by the author, were in capital, central and northern macro-regions. The macro-regions in eastern Poland remained the least developed, therefore the State policy should be concentrated on this part of the country.
4. In most prosperous macro-regions, the metropolitan areas appear to be driving force in economic development, whereas in deprived macro-regions weak development within industrial and service sectors, semi-subsistence agriculture, low investments and population incomes seem to be the main restraining forces in the economic development.

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Essence of Lease Operations and their Historical Development

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Abstract

The article includes the comparison on the essence of notions “lease” and “leasing”, and the consideration of different opinions on the definition of lease as well as the study on types of lease operations (operational and financial lease), and the analysis for the application of lease for expansion of business activities. The article also offers an insight into the historical development of lease in Latvia and abroad. Various authors have defined lease and its types differently (K. Torgāns (1993), L. Mihejeva (1999), A. Vedļa (2002), A. Ludboržs (2006), etc.). Currently no opinion can be considered as complete and final. The issue on the origination and historical development of lease is also arguable.

The aim of the research is to evaluate the essence of lease operations, and to study the historical development of lease.

Key words: lease, lease operations, operational lease, financial lease

Introduction

The economic situation of any country is determined by its sectors of economy and their development, which depends on the production of progressive, qualitative and demanded products. That in turn is related to the introduction of new and modern technologies. At present there are many opportunities to attract funding for business. Every company can choose the most appropriate way of financing its activities. Lease is the most convenient way to acquire means of production without immobilising large amounts of money. Lease operations serve as a stimulus for business; they develop and improve together with the development of economy in the country. Choosing the most appropriate type of lease is also a burning issue for the development of entrepreneurship in the country.

Different opinions about the notions of lease and leasing exist in Latvia, but they are little studied scientifically.

Several scientists, economists, lawyers, certified auditors have studied leasing operations and their researches have been reflected in economic literature, in periodicals and scientific articles: I. Geipele (1999), J. Lazdiņš (2000), E. Zelgalvis (2000), E. Vasermanis(2000), V. Bikse (2001), J. Zaiceva (2000, 2006), V. Usoviča (2002), L. Leja (2003), etc.

Publications of this type on lease operations are rarely found. K. Torgāns (1993) has studied the legal and normative regulation of lease operations, L. Mihejeva (1999) has studied the essence of lease and the lease of land, A. Vedļa (2002) – the classification of lease, M. Januška (2003) – the legal issues of lease relations, while A. Ludboržs (2006) and K. Āboliņš (2006) have studied the accounting of lease operations.

To date, lease operations and their historical development have not been researched in detail, therefore the aim of this research is to evaluate the essence of lease operations, and to study the historical development of the lease.

In order to achieve the research aim, the following tasks are set:

- 1) to compare the notions of lease and leasing, and to reflect the components of a lease operation;
- 2) to study the types of lease operations and their opportunities in expanding business activities;
- 1) to perform the historical survey on lease operations in Latvia and abroad.

Materials and Methods

The International Accounting Standard No. 17 (IAS), scientific publications, legal materials, special and economic literature were used in the research.

The following methods were used to perform the research tasks: the abstract-logical, analysis and synthesis, and monographic method.

Results and Discussion

1. The Notion of Lease and Components of Lease Operations

Having studied the special, economic and scientific literature dealing with lease operations, it is possible to conclude that there is no single opinion on the definition of lease, or on the essence of lease and leasing.

The word “leasing” is derived from the English word “lease”, which is looked upon not as a single deal, but as long relations, subjected to the development existing between the participants of the lease operation. Leasing cannot be considered as a loan; it is a lease or more precisely, a lease of some thing for a certain period and on certain terms (Zaiceva J., 2000). Historically leasing has developed from rent (lease) and the word “leasing” usually means a lease, not a specific kind of agreement. From the above, it is possible to conclude that “leasing” is a lease relationship between the lessor and the lessee.

The literature on economics explains the lease notion in different ways. Lease is transference of material values to the use of the lessee, for which the lessee pays the lease payment as provided by the agreement (Dictionary of Economics, 2000).

Professor L. Mihejeva defines the lease more precisely. Lease is a contractual relationship that is mutually signed between the lessor – the owner and the lessee – the leaseholder of the owner’s property. According to the lease agreement, the owner transfers the ownership rights to the lessee for a specific payment on a certain period, and allows the lessee to use the yield of the property. In the rural areas of Latvia the lease of land is the most popular type (Dobele A., Mihejeva L., Špoģis K. etc., 1999).

Lease is similarly defined by A. Vedļa. Lease is an agreement according to which one party (the owner) transfers the rights to use his/her property to the other party (the lessee) for a specific payment on a certain period, and allows the lessee to use the yield of the property (Vedļa A., 2002).

The analysis of these definitions allows concluding that lease is a bilateral agreement. The lawyer L. Leja also claims that the notion “lease” includes bilateral relationship (between the lessee and the lessor), while “leasing” is a triangular relationship (between the lessor, the lessee and the seller) in which the lessor functions only as a source of finance (Leja L., 2003). The same opinion is also expressed by other economists (Zaiceva J., 2000, Vedļa A., 2002, Zelgalvis E., 2000).

However, V. Bikse and M. Grodskis consider that the main difference between leasing and lease is that if the company leases a means of labour with the rights of ransom, the company immediately turns into the owner of this means upon the first instalment, whereas in case of leasing, the company turns into the owner, when the value of the means is completely paid (Bikse V., Grodskis M., 2001). However, the International Accounting Standard No. 17 states provides that depending on the agreement between the lessor and the lessee, the leasehold can devolve into the property of the lessee after a certain period of time, and when a certain sum of money is paid (IAS, 1998).

According to the author’s opinion, Professor K. Torgāns addresses this issue most completely, emphasising that the lease agreement may include terms that are typical for a purchase, loan, credit or some other agreement. In addition, the provider of the loan or repair service can be involved in the agreement as the third party. For example, workbenches are leased by one company, but their spare parts are provided by the producer, which also provides the necessary repair service; whereas the financial support to the lessee in a form of a credit is given by the bank as the next participant of the agreement. Such combined agreements in business practice have been assigned the term “leasing”, which is taken from English. The given deals are more often referred to as “lease” than “leasing” in the countries, where the business language is English. English-speaking people do not consider that there is a special type of legal relationships, different from lease that should be opposed to lease as an agreement of another type. For them, leasing is a lease in all its varieties, including the simplest form. In Latvian we speak about leasing as something specific, different from lease. It is not correct either from the legal or the linguistic aspect (Torgāns K., 1993).

Some publications express the opinion that in international practice leasing is often not considered anything special and different from lease. For example, the title of the International Accounting Standard No. 17 is “Accounting for leasers” (Zaiceva J., 2000). The standard does not regulate leasing as a unified totality of rights and responsibilities, it regulates one specific element of leasing – lease relationship, as provided by the definition of the agreement of financial lease in Item 3 of the Standard, which does not contain any

indication to purchase of the basic elements of leasing – the leasehold from the third person in order to transfer it to the use of the lessee.

To understand the essence of lease better, all components of the lease operation should be analysed. Participants of the lease operation are the lessor and the lessee, because the International Accounting Standard No. 17 states that lease is an agreement with which the lessor transfers the right to the lessee to use the assets (leasehold) for one or several lease payments on a certain period of time.

The lessor is the owner of the leased property; it can be a natural or a legal entity. The lessee is any natural entity or legal entity that has the rights to use the leasehold.

However, the parties involved in the financial lease are the lessor, the lessee and the seller of the leasehold, and the operations are performed in the following way:

- 1) the lessee chooses the leasehold in the market;
- 2) the lessee signs the lease agreement with the lessor;
- 3) the lessor buys the leasehold from the seller;
- 4) the seller transfers the leasehold to the lessor;
- 5) the seller transfers the leasehold to the lessee;
- 6) the lessee pays the lease payment to the lessor;
- 7) when the lease period finishes, the lessee receives the ownership of the leasehold, but not always (Ludboržs A., 2006).

Leaseholds can be any movable and immovable property referable to fixed assets. Movable property is equipment, vehicles, building machinery, household appliances, computers, etc. Immovable property is production and other buildings, warehouses, store space, office space, different structures and land.

Developing lease relationship, one has to take into consideration the lease period that to large extent determines the lessee's sense of security and interest to invest more. It is also in the interest of the lessor to transfer the property to a stable owner who has been doing business for long time.

Depending on the lease period, we distinguish between:

- short-term lease;
- long-term lease.

Special literature on lease agreements advises to sign the agreement on the period not shorter than three years. Lease periods for agricultural machinery, production equipment usually are shorter, because nowadays modern intensive technologies enter the market fast, but for land the lease period is longer.

It is significant to set the appropriate amount of the lease payment. It is the payment that the lessee pays to the lessor for the use of the property, provided the parties agree on this of their own free will, and it is stipulated by the lease agreement.

An appropriately set payment that satisfies both parties consists of two values:

- 1) the lease payment should constitute such part of the value that ensures the restoration of the property. It has to be in the amount of the property depreciation;
- 2) it is the part of lessee's profit that should not be lower than the loan interest rate the lessor would get investing the value of the leasehold in the bank.

2. Types of the Lease and Opportunities to Use them in Business Activities

The economic essence of lease operations is more important than their legal form because it is the economic essence that gives the opportunity to classify leases.

The lease can be divided into two basic types, depending on the economic content of the deal:

- financial lease;
- operational lease.

The other lease types are subordinated to these two and should be considered as modifications of a lease, for example, selling with receiving back in lease (Ludboržs A., 2006), and selling and the reverse lease (IAS, 1998).

Financial lease is a lease that transfers to the lessee all the risks and payments characteristic to the property rights of the assets. In addition, the ownership right can and cannot be transferred. During the lease period the lessor receives the lease payments and at the end of the lease period the leasehold is transferred to the lessee who thus gets the ownership, but it is not a compulsory requirement (Ludboržs A., 2006).

The International Accounting Standard No. 17 offers five criteria, based on which it is possible to find out whether all risks of use and economic benefits have been transferred from the lessor to the lessee:

- 1) at the end of the lease period the lessee becomes the owner of the asset. As during all its expedient use period the property will be with the lessee, he also overtakes the risks and benefits for the development of his business activities;
- 2) at the end of the lease period the lessee has the rights to buy the asset for the price that could be sufficiently lower than the initial value. It means that when the lease period is over the ownership rights for the asset should be transferred to the lessee although it is not provided by the contractual obligations between the parties;
- 3) the lease period includes the biggest part of the business use of the asset, thus the lessee will also gain the biggest part of the economic benefit;

However the drawback is that the IAS No.17 does not provide precise criteria how much of the leasehold expedient use is the biggest part. In practice the 75% indicator is applied, but it does not always indicate that it is the financial lease.

- 4) the value of the lease payment at the moment the lease is paid is at least equal to the initial value of the asset (leasehold). In practice the 90% indicator is applied. In fact, the lessee buys the leasehold splitting the payment period;
- 5) the property is so specific that only the lessee can use it without performing big changes (Āboltniš K., 2006).

Additional criteria can also be used for the classification in order to say that the lease is a financial lease:

- 1) the lessee can break the lease agreement, and he also covers the lessor's losses incurred due to the breach of the agreement;
- 2) the lessee receives profit or covers losses that originate when the residual value of the leasehold changes;
- 3) the lessee has the opportunity to continue the second lease period for the market price;
- 4) the lessor purchases the leasehold exactly for the needs of the lessee as chosen by the lessee (Ludboržs A., 2006).

But if all the risks and payments characteristic to the ownership rights are not transferred to the lease, the lease is classified as an operational lease.

The operational lease is the lease that is not a financial lease because when the lease period ends, the lessee returns the leasehold to the lessor.

The operational lease should be chosen if the lessee:

- 1) is not sure on his long-term solvency;
- 2) is not sure about the right choice of the leasehold;
- 3) does not want to raise the indicators of the liabilities and assets of the balance;
- 4) wants to lease the asset for a certain period of time, and does not need the leasehold after this period.

A subtype of financial and operational lease – selling with receiving it back for lease – means selling of the asset and receiving the same asset (leasehold) back for lease: the owner of the leasehold sells it to the next lessor, and then leases it from this lessor. The seller of the leasehold and the lessee is one and the same person – thus the user of the leasehold remains the same. Therefore the seller of the leasehold gains additional free resources, but the lessor receives the ownership rights to the leasehold (Ludboržs A., 2006).

In the international practice many other lease modifications are met (Figure 1).

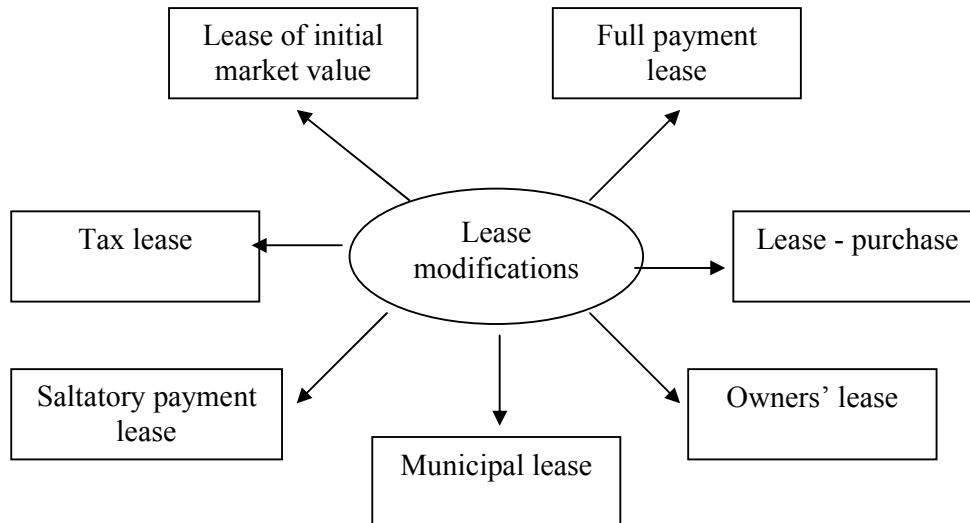
At the end of the lease agreement of initial market value, the lessee's rights to choose the following can be provided:

- to renew the lease of the leasehold taking into consideration the initial market value;
- to purchase the leasehold for its initial market value.

Within the complete payment lease agreement, with the help of lease payments, the lessee covers the leasehold value in full amount, including the financing, overhead and reasonable profit, not referring special value to the residual value of the leasehold.

In the lease-purchase agreement the period corresponds to the period of the business use of the leasehold. The lease purchase agreement can provide that at the end of the lease period the lessee may purchase the leasehold for the price that is much lower than the actual market value.

Owner's lease is a modification of the long-term lease, within which from time to time additional things can be added to the leasehold; wherewith the parties make lists of the newly added things following the provisions of the initial agreement.



Source: Designed by the author

Figure 1. **Lease modifications**

Municipal lease is a lease agreement signed to satisfy the needs of the state or the municipality. The saltatory payment lease agreement provides that lease payments should be made only at certain periods of the year.

The tax lease agreement contains the general provision that the lessor overtakes all the risks referred to the ownership rights, therefore the lessor can receive all the benefits related to the ownership rights, including the tax allowance if provided by the state legislation (Leja L, 2003).

Ching F. Lee and Joseph I. Finerti, American researchers and financial specialists divided the lease into:

- 1) direct lease;
- 2) credit lease;
- 3) lease with selling (Lee C.F.; Finerti D.I., 2000).

Lease operations are convenient and fast to be performed; they give an opportunity to purchase means of production without immobilising large amount of money for investments.

Three types of lease service are available in Latvia:

- 1) operational lease;
- 2) financial lease;
- 3) full-service lease.

Recently the operational lease is getting more popular. It is mainly lease of a car for a specific period of time (5-7 years), paying a certain amount of money per month (Pančenko A., 2006). The lease of industrial technology allows businesses to purchase the most appropriate, most efficient and safest technologies. The leaseholds are used for production and providing services and the equipment pays itself back (Šaršūne V., 2006).

Financial lease also has a stable place in the market. This lease provides that at the end of the lease period the leasehold is transferred to the lessee's ownership. Using the financial lease, there is an opportunity to secure against inflation because the payments are fixed and the devaluation of money does not influence them.

The third lease option is full-service lease. It is the operational and financial lease with additional service. It is an opportunity to save both administrative and financial resources, as the lessor takes care of everything. The service does not include repairs of transport, maintenance, insurance, roadworthiness test, winter tyres and other services related to the maintenance of the car park. The company benefit is not only

cost saving. The full-service lease gives the possibility to concentrate on developing the main business activity, and thus gaining bigger profit from it (Krauze K., 2007).

If the company solves all the issues not related to its main business activity only with the help of its own resources, often the time and resources are not used efficiently, thus impeding the development of the company.

3. Historical Development of the Lease

The UK is considered to be the birthplace of the origin, development and economic justification of lease relations, where D. Ricardo, one of the most recognized representatives of classical political economy, created the well-known theory on the lease of land. From the UK, the lease relationships spread over other European countries and to the countries of America.

Lease, as we understand it today, was not known until the turn of the 17th and 18th centuries. Financial lease appeared in 1877 when *Bell Telephone Company* (the USA) made a decision not to sell telephones, but lease them upon the condition that when a certain payment is settled, the telephone is transferred to the lessor's ownership.

Such an example was followed by a number of other US companies, for example, *United Shoe Machinery Corporation* (founded in 1899) began to offer shoemakers and shoe repair workshops not only to buy but also to lease comparatively more expensive equipment.

It can be concluded that at that time the lease was used as a means to increase sales and ensure the position of a monopoly. Taking into consideration that lessors simultaneously were also sellers of the leaseholds, at the end of the 19th century leasing in the USA had explicit features of a lease purchase or a lease with redemption, which does not give any grounds to consider it as a separate kind of deals existing along with the lease and the purchase (Leja L., 2003).

The scope of the lease operations market rose dramatically when the production of cars developed. The first car leasing was recorded in the USA in 1918. In the 1930s of the 20th century Henry Ford also expanded sales of his cars by using lease elements; however, a real founder of car leasing is Zolly Frank from Chicago, who was the first to offer long-term lease of cars in the 1940s (Geipele I., 1999).

Now the idea of leasing (lease) has been taken over by Europe, Africa, Australia, New Zealand, Japan, and China. The world leasing market is associated with the big triangle "USA-Western Europe-Japan". In Europe, LEASEUROPE, the Union of the Associations of European Leasing Societies, founded in Brussels in 1972, has a significant role (Leja L., 2003).

In Latvia, the beginnings of the lease can be traced back to the end of 1980s and beginning of 1990s when instead of leasing companies a structure developed by the former command economic system and called *Gossnab*, started to lease road building and construction machinery, equipment and others (Geipele I. 1999).

The historical development of the lease is not described in literature, but the origin of leasing and its further development is usually divided into three periods:

The first period – in Latvia the year 1992 should be considered as the year of the birth of a leasing operation in its real sense, when the first leasing company "Agrolizings" was founded. Its goal was to assist Latvian farmers in acquiring the expensive foreign machinery – combine harvesters, tractors, equipment of drying kilns, etc.

The second period - end of 1993 and beginning of 1994 when banks already operated in this area of investment. Especial activity was shown by the Baltic Transit Bank, which in 1994 became the founder of the National Lessor Association of Latvia. The Association was established as an independent public organization, the goal of which was to unite its members in order to facilitate the development of the economy of Latvia with developing leasing.

The third period – in the second half of 1995 the National Lessor Association of Latvia (LNLDA) became the associate of the Union of European National Leasing Associations LEASEUROPE. To solve different issues related to the development of the leasing sector, work groups are created. On June 18, 1998 due to the expansion and change of tasks a new name to the association is registered – Leasing Association of Latvia (LLA).

In the course of time a situation developed when the philosophy of leasing companies and banks concerning leasing operations differed, one of the main contradictions between commercial banks and

leasing societies being different interpretation of the leasing notion and a different approach to calculating the VAT payment procedure. As a result of all this, four leasing societies discontinued their membership in the LLA, considering that LLA cannot ensure interests of all its members because commercial banks have a different approach to work in the leasing market, and on October 17, 2000 a public organization Lessors Association of Latvia (LLDA) was founded.

The theoretical evaluation and historical overview of lease operations serve as basis for further research and analysis of this issue. Without paying attention to the essence of lease operations and classification of lease, it is impossible to continue the research on the tendencies of the lease development in the financial market.

Conclusions

1. Lease is an important kind of financing that allows businesses to purchase movable and immovable property without immobilising large amount of money for investment.
2. Basic components of a lease operation are the leasehold (means of production), the subject of the deal (parties of the lease agreement), the lease period, the lease payment and services offered during the lease operation time.
3. Lease is divided into two basic groups: financial lease and operational lease that comprise many modifications, including the lease of the initial market value, complete payment lease, lease – purchase, owners' lease, municipal lease, saltatory payment lease, tax lease, etc.
4. The risks and liabilities referred to the ownership rights in the financial lease are transferred to the lessee, but in the operational lease they stay within the lessor.
5. Lease is growing in popularity in Latvia, as lease operations are convenient and fast to be performed. Lease can be successfully used for business development.

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Problematic Aspects and Solutions of Corporate Income Tax in Latvia

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Abstract

The most significant problem for the government of Latvia is increasing the gross domestic product (GDP) as well as GDP per capita by means of a reasonable and well-considered financial and economic policy in relation to the elaboration and implementation of the principles of tax policy carried out in the interests of the population, as well as by decreasing the corruption level and the “shadow economy”.

The law “On the Corporate Income Tax” in Latvia sets a proportional rate of this tax that originally was 25% of the company profit, but since 2004 it has been changed, and set at the rate of 15% of the taxable income.

At present the corporate income tax not always serves the interests of Latvian population as all enterprises have an equal tax rate regardless of the profit obtained and the ability of enterprises to pay it.

Key words: taxes, corporate income tax, Latvia

Aim, tasks and methods

The aim of this paper is to discuss and analyse the essence of corporate income tax and its role in the national economy of Latvia as well as the mechanism for collecting and distributing the taxes imposed, and to elaborate recommendations for the improvement of tax legislation.

In order to achieve this aim, the following tasks are advanced for the solution:

- 1) to clarify and analyse the purpose and tasks of the corporate income tax;
- 2) to assess the performance of the corporate income tax, its role in the tax system, particularly its improvement according to the conceptually fair principles of imposing taxes not eliminating the collection of taxes.

Methods used in the study

The scientific elaboration of this paper is based on the law of the Republic of Latvia “On Corporate Income Tax” as well as on the corresponding Cabinet Regulations. The mechanism of collecting corporate income tax is analysed in the EU countries. Statistical analysis, inductive and deductive, monographic and logically constructive research methods have been used for the purpose of the research.

Introduction

The strengthening of the state power during all periods of the state development has required larger and smaller funds, the main source of which are taxes. During the course of time, the government expenditure has increased, and at present new kinds of expenses have appeared alongside with the former objectives of administration, political and economic power. These new expenses are related to solving social and cultural problems, raising the level of general and professional education. However, it has always been required that the government revenues may not eliminate the ability of tax collection, though taxes, on the contrary, have to ensure the lasting operation of enterprises (farms), and prosperity and the lasting welfare of all the population.

The gross national product – the income belonging to residents and enterprises has always been the source of taxes. The national statistics usually show it as the gross domestic product (GDP). From the supply side, GDP is composed of the total value added of all kinds of economic activity, as well as of the sum of value added tax, customs duties, and excise taxes. The total value added is calculated if the value of intermediate consumption is deducted, i.e., the value of resources (goods and services) used in production.

Results and discussions

In Latvia, the tax reform of 1995 was carried out in order to achieve two principal purposes – to provide stable budget income for financing the priority social and economic activities, and to limit the financial deficit. The other purpose was to promote the economic growth of the state by advancing fair competition and giving up unreasonable privileges or tax allowances as well as unjustified high tax rates for several sectors of economy. In order to promote the economic development, the main emphasis was laid on imposing taxes on consumption rather than income, thus, stimulating the growth of investments in the national economy (Salmins J., 2005).

All domestic enterprises as well as foreign enterprises in Latvia and permanent representatives of non-resident enterprises are the taxable subjects of corporate income tax (CIT).

The taxable object of CIT is the amount of profit or losses shown in annual income statements of enterprises. The profit and losses obtained in foreign countries by Latvian enterprises are to be added, while the profit and losses obtained in Latvia from foreign investments, which any non-resident has a right to export according to the double taxation agreement, are to be subtracted.

The basis of CIT is the profit and losses shown in income statements of Latvian and foreign enterprises calculated according to the laws and/or instructions effected in Latvia on tax exemption or privileges. The CIT basis is related to the profitability of an economic activity.

Table 1

Consolidated budget revenues of the government in Latvia between 2004 and 2006 in million LVL

Revenues from taxes and non-taxes	2004		2005		2006	
	Revenue	%	Revenue	%	Revenue	%
State consolidated revenue - total	2025.4	100	2545.7	100	3335.1	100
Including personal income tax (PIT)	435.5	21.5	509.1	20.0	657.2	19.7
Corporate income tax (CIT)	127.8	6.3	180.7	7.1	253.8	7.6
Real estate tax (RET), including land and property tax balances	56.8	2.8	61.6	2.4	66.0	2.0
Total PIT, CIT, RET	620.1	30.6	751.4	29.5	977.0	29.3
Social security contributions	641.2	31.7	751.0	29.5	1000.2	30.0
Value added tax	486.7	24.0	677.1	26.6	930.0	27.9
Excise tax	236.9	11.7	314.0	12.3	379.9	11.4
Customs duties	17.1	0.8	19.2	0.8	20.7	0.6
Natural resources tax	8.3	0.4	10.3	0.4	11.0	0.3
Other tax revenues	15.1	0.8	22.7	0.9	15.8	0.5

Source: Compiled according to the data of Central Statistical Bureau

<http://www.test.csb.gov.lv:8080/Dialog/Saveshow.asp> November 1, 2006

To set a tax rate, it is important to observe the fiscal principles as well as the principles of national economy and social equality. According to the data of the Statistical Yearbook of Latvia (2004, 2005) as well as the data of monthly bulletins (No 1, No 2, 2005), the total government revenues amounted to LVL 2545.7 million in the consolidated budget. Of which, the tax revenues accounted for 79.6% of the total government budget income, but the income of non-taxes and other income – LVL 654.1 million or 20.4%. Thus, the role of taxes is very important, although during the latest years taxes have a tendency to decrease. According to the data of the Central Statistical Bureau, it was expected that in 2006 the government revenues could be LVL 3335.1 million, of which 3 taxes – personal income tax (PIT), corporate income tax (CIT) and real estate tax (RET), included into the analysis, could produce LVL 977.0 million or 29.3% of all the revenues in 2006. Among them PIT – LVL 657.2 million or 19.7%, CIT – LVL 253.8 million or 7.5% and RET – LVL 66.0 million or 2% of the annual revenues.

The social security compulsory contributions amounted to LVL 1000.2 million or 30.0 % of the government income in 2006, and they were used only for special purposes; the direct taxes produced almost

60% of the total revenue. It may be concluded that the three above-mentioned taxes totally cover a large part of the budget expenditure. Besides, they are closely related; therefore, they should be calculated according to the common principles and methods.

The main drawback of the existing tax system in Latvia is that all the three types of taxes have definite, the so-called, proportional tax rates which are equal for several taxes. It leads to fast stratification of the inhabitants in Latvia according to the property condition and to the growing stress in social sense. The mentioned taxes have proportional rates also in Lithuania and Estonia. Thus, almost all the EU countries have given up proportional tax rates and have established progressive rates, and the tax burden has to be paid mainly by those who can do it (Vitola I., Boruks A., 2007).

For example, in Sweden there are several taxes on capital, which refer to selling all taxable items, including parts of immovable property or its capital and other assets. The proportional CIT rate for selling an enterprise (or its parts), e.g., 20% or 30% is determined irrespective of the value of the income source to be sold, but according to the fact, whether the seller is a natural entity or whether the immovable property or its part is also used in business.

It should be mentioned that if the immovable property is sold by an enterprise, each country acts according to the laws and instructions governing in the particular country.

CIT rates are usually different in the world – they may be proportional, progressive and regressive. Thus, in Israel the CIT rate is progressive according to the law – 10-32% of the income declared.

The rate is progressive in Australia, too – within the range of 10-50%, in South Korea – 18-50%, in Great Britain – 25-32% and in the Netherlands – 29.0-34.5%. The USA acts in a specific way - all enterprises are divided into groups, and each group has a different tax rate. If the value of an enterprise is less than USD 50,000, the rate is 15%. If the value of an enterprise is USD 75,000-100,000 – the rate is 35%. If the value of an enterprise exceeds USD 100,000, the rate is 39% (Sprogis A., Oskalne R., Bergmane Dz., 2002).

Table 2

Corporate income tax rates in some EU countries, % of income

Country	CIT rate, % of income
Austria	10-50
Belgium	34
Denmark	30
France	34,3
Greece	35
Ireland	12,5
Italy	35
Great Britain	25-32
Luxembourg	22
Netherlands	29-34.5
Portugal	27,5
Finland	29
Spain	35
Germany	25
Sweden	28
Czech Republic	28
Estonia	35
Cyprus	15
Latvia	15

Source: materials from the EU information centre of the Saeima of Latvia, <http://www.eiinfo.lv>

In other countries, the CIT rates usually are proportional, but the rates vary between 12.5% and 35%. Besides, different countries apply different CIT reductions and privileges.

In each country, a compromise has to be found and it is found between the CIT rates and the affiliation of enterprises to mini-enterprises, small enterprises, medium size and large enterprises. The

number of employees in an enterprise serves as a simple criterion. Businesses are classified by the definition of small and medium enterprises (SME) determined in the law "On Control of Aid for Commercial Activity" according to the EC Regulation No. 70/2001 and the amendments made by the EC Regulation No. 364/2004 as follows:

- micro-enterprises: 1-9 employees;
- small enterprises: 10-49 employees;
- medium enterprises: 50-249 employees.

The authors conclude:

1. The reduction of CIT rate has to be considered as a hurried and unfair action because the PIT rate remained unchanged – on a rate of 25%. Therefore, all natural entities paying the PIT – family enterprises, individual producers, farmers and fishermen enterprises, the self-employed and craft enterprises (which do not have to fill in the annual income statements according to the law "On Annual Reports" /Oct.19, 2006/) are in a more difficult economic situation than the CIT payers because their tax burden exceeds the CIT rates by about 10%.
2. At present the CIT not always serves the interests of Latvian population because it imposes an equal tax rate on all enterprises regardless of the amount of profit obtained and the ability of all enterprises to pay it.
3. The CIT has no possibility to protect the local market, particularly micro-enterprises having 1-9 employees.
4. At present, the CIT is not able to fulfil its social function – to provide the welfare of broad population strata as well as even regional development – because it is impossible to provide it without wide moral and financial support for mini-enterprises and small enterprises.

Following these considerations, the authors of this paper recommend:

- to introduce the progressive CIT rate in Latvia, and to set the tax rate between 5% and 25% of the taxable income of an enterprise;
- to introduce a 5% CIT rate for mini-enterprises, particularly in underdeveloped regions, besides, mini-enterprises having 1-9 employees have to receive a full tax exemption for the first 3 years as well as be provided with financial support during these years;
- to provide a possibility to decrease the CIT taxable profit for mini-enterprises and small enterprises by taking into consideration the losses of the previous years;
- to set the CIT rate at 15-20% of taxable profit for medium size enterprises having 50-249 employees;
- to set the CIT rate at 20-25% of taxable profit for large enterprises having 250 or more employees.

If the progressive CIT rate were introduced, the tax burden would decrease, as large and medium size enterprises obtain larger profits than mini-enterprises and small enterprises do. At the same time, the principle of social equality will be carried out and the taxes have to be paid by those who are able to do it. The transition to the progressive CIT rate will distribute the tax burden more evenly and will help develop the national economy of Latvia.

Conclusions and recommendations

- At present, the CIT rate is proportional and equal for all the taxpayers. This rate has been reduced several times from 25% to 15%. In spite of this tax rate reduction, the CIT revenue shows the largest government income growth during the period 2000 – 2006.
- During the period 2000 – 2006, the CIT revenue has grown from LVL 73.7 million to LVL 253.8 million or 3.4 times. The "liberal" government policy may explain the fact. If there had not been the CIT rate reduction in 2003 – 2004, according to the calculations the government could have obtained not only LVL 253.8 million but about LVL 530-535 million from the CIT in 2006. It means that the CIT revenues had been cut by approximately more than LVL 250-255 million. Therefore starting from 2004 the government could have been able to raise salaries for police officers, firefighters, employees of medical institutions, teachers and scientists-researchers up to the level demanded by the Free Trade Unions.

Considering the real situation and the fact that profits of large enterprises reach even 100-300% a year, the authors recommend:

- to pass over from the proportional CIT rate to the progressive one, having the rate differentiation between 5% and 25%, taking into consideration the differentiation for SME (according to the EU Regulation No. 70/2001 and the corresponding amendments);
- the transition to the progressive CIT rate could give a possibility to optimise the tax burden and observe the principle – paid by those able to do it;
- the transition to the progressive CIT rate would give a possibility to support mini-enterprises and small size enterprises financially as well as to pay the CIT debts accumulated during the previous 5 years by subtracting the debt from the CIT sums to be paid actually;
- the made recommendations may offer a possibility to develop further the national economy of Latvia, and accelerate its approach to the average EU development level.

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Efficiency of Agricultural Enterprises in Relation to Education and Seniority of the Managers

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Abstract

The study deals with the relationship between the efficiency of the agricultural companies and their managers' level of education, the type of their education, as well as their seniority. Carried out in 118-123 agricultural enterprises, the research covers the period between 2000 and 2004. On the whole, it must be stated that the enterprises administered by persons with an average level of education have presented the highest profitability of the land and equity capital, economic efficiency of work and quick financial liquidity. The highest profitability of the cropland area has been achieved by the enterprises administered by persons with an agricultural level of education. As regards one's own capital profitability and the economic efficiency of work, the most dominating enterprises have proved to be those administered by managers with a level of education different from the agricultural, whose financial liquidity has gradually begun to dominate. The research has not ascertained any unambiguous dependencies between the seniority of the managers and the efficiency of the usage of cropland, work and capital, or the degree of financial liquidity.

Key words: agricultural enterprises, education and seniority, profitability of cropland area and own capital, economic efficiency of work, quick financial liquidity

Introduction

The role of education in the development of contemporary society is irrefutable. In the context of the European integration process, education becomes a more and more concrete and discernible perspective for the European Union (EU) guaranteeing mutual cooperation among its members. The enlargement of the European Union in 2004 has begun a vital process of institutional cooperation and the intensification of personal contacts with other European countries, and their citizens, with respect to various areas (Kowalewski T., 2004).

Knowledge has come to be recognized as a fundamental potential of the present-day economy, without which no society could function in the globalised world of widespread competition. Knowledge is becoming the focal component of the production, while learning itself the most important economic process (OECD, 2000). The dynamic economic, cultural, social and scientific transformations occurring in people's lives bring the need for a continuous upgrade and improvements in the level of basic knowledge and the key-competences necessary to evolve and adapt in various working conditions. Therefore, the EU members have decided to introduce into their policies the new objective of 'lifelong learning' (Eurydice, 2000). The education of adults in Poland is still unable to keep up with its needs. This is noteworthy especially in the rural areas, where education of farmers and the remaining population still remains on a very low level. Only about 4.3% of the country people have higher education, while 22.4% average and post-secondary. There exist, moreover, a sufficient number of vital differences between the formal level of obtained education and people's genuine skills and abilities (Włoszyn J., 2004). This translates into the widely comprehensible practical knowledge of business management and managers' communicative competences. It seems that the acquisition and the usage of such competences may be of enormous use to the managers, as it would make them develop their own managerial abilities, as well as the staff management skills (Krzyżanowska K., 2004).

The person in charge of an enterprise should be endowed with a vast theoretical and practical knowledge. One of the ways to improve on its practical side is to follow a suitable seniority in an economic practice. From a broader perspective, one could talk in such case about the process of knowledge management, which constitutes model activities of an enterprise with all the aspects of its competences, such as knowledge building, codification, knowledge division and its usage in the promotion of learning and innovation (Gupta J.H.D., Sharma J.K., 2004). The conditions of knowledge management in Polish enterprises, except for the budget limitations, have predominantly a non-material character, and refer mostly

to the style of management and problems concerning personnel policies in an organisation and its organisational culture (Godziszewski B., 2005). The process of managing a small enterprise differs significantly from the form and the manner of managing a large or an average company. It is to do both with the possibility of formulating the strategy, the form, the temporary horizon and the control of its accomplishment, as well as the likelihood of introducing changes. To a greater degree, the development of a company is more dominated by the person of the owner who originates the activity in a small unit than in a medium-size enterprise (Brojakowska M., 2007).

Undoubtedly, Polish accession to the EU has increased the competition of agricultural enterprises (farms) from other countries. Simultaneously, however, this offered larger possibilities for the farming product to be obtained in the new markets. One of the factors shaping the efficiency of the activity of the agricultural enterprises is the vocational training of their managers, which is reflected in, among others, the level and the sort of their education. An important issue in this respect is to encourage people to share their knowledge rather than accumulate it passively. This is believed to be the first step on the way to an effective pro-development management in a modern enterprise. Curiously, it is hard to discuss the issue of knowledge if we do not consider the cooperation between people and the existence of the conditions of cooperation (Paliszkievicz J., 2007). The owners of the enterprises notice more often that the intangible assets of the company (knowledge, education, innovativeness and the morality of workers) determine the value of an enterprise and its market success even when its image is missing in the company's financial statements (Firlej K., 2005). The human capital is an important link which shapes the value of a company by means of the financial performance attained in the process of taking economic decisions (Krajewski M., 2006). Engaging manpower of a given level of knowledge and skills, one should remember, however, about the rationality of the activities in this area, as it is connected with the cost incurrence (Wasilewski M., Wasilewska A., 2007). The measurement of the efficiency of the agricultural enterprises' activity is still as important as valid. It is a usual practice to assess the efficiency of the utilisation of cropland, work and capital (Wasilewski M., 2005), while it is pretty rare to investigate the dependencies of the production factors usage with respect to the length of seniority and the level of education of those in charge of the enterprises.

The research methodology

The aim of this study is to determine the relationship between the efficiency of the agricultural enterprises with respect to their managers' level of education, the sort of their education, as well as their seniority. The analysis will refer to the profitability of cropland, the profitability of one's own capital, the economic efficiency of work and the level of quick financial liquidity.

The research has been conducted in the Agricultural Property Agency (APA) companies, the enterprises leasing the land from the APA and those in which the land has been purchased from the APA companies¹². The investigated period covers the years from 2000 to 2004. The selection of the objects in question is intentional as the research uses information provided comprehensively by their managers. The total number of enterprises depending on the year oscillated in the bracket 118-123. The enterprises analysed are located all over Poland in all voivodships, comprising the cropland area (CA) of at least 400 hectares. The calculations have been carried out with the usage of value information expressed in the current prices.

As a criterion of the classification of the agricultural enterprises the research uses the managers' level and sort of education, as well as their seniority¹³. As regards the criterion of the managers' level of education, the enterprises have been divided into two following groups: the first one (I) consisting of the enterprises whose managers hold a secondary school diploma and the second (II) with the managers who have graduated from a higher education institution¹⁴. By the same feature, the enterprises have been divided

¹² The research has been conducted in enterprises which cooperate with the Institute of Agriculture and Food Economics –National Research Institute in Warsaw.

¹³ It assumed that analyses conducted established the community of enterprises, with particular reference in changes of qualifications to particular group. The influence of numerical amount changes on analysed results including all groups was very small.

¹⁴ In years 2000-2004 the number of managers with average education formed accordingly: 30, 36, 35, 40, 37 – whereas with higher education: 93, 87, 87, 83, 81 persons.

into two groups with respect to the sort of their managers' education. The first group (I) comprises those whose managers have obtained agricultural education, while the second (II) a different one¹⁵.

A different rank method has been used to classify the enterprises with respect to the seniority of their managers. It is based on the arrangement of the objects according to some of their chosen features, followed by the totalling of the positions for each classification. The method used to divide the enterprises according to the criterion of their managers' seniority stems from the quartiles' method. Consequently, the first group consists of 25% of the enterprises with the shortest managers' seniority, the second - the average seniority (25% communities), the third - the above-the-average seniority (25%), and the fourth (25%) the longest¹⁶ seniority.

The results of the research

Table 1 presents the process of shaping the profitability of cropland area, calculated as the relation of the net gain (loss) to CA area of the enterprise. In this respect, the years discussed witnessed the dominance of the enterprises managed by persons with an average level of education. This group of enterprises observed a significantly growing tendency of the analysed indicator in the years 2001 to 2004 (by about 334.6 %). The highest dominance of this group of enterprises over the ones managed by a person with a higher education (the second group) appeared in 2004, amounting to 755 PLN/ha CA. According to this criterion the second group of the enterprises identified in 2002 the lowest profitability of the land usage in the investigated period, i.e., on the level of solely 6 PLN/ha CA. The years 2000 to 2003 proved the dominance of the enterprises administered by persons with the agricultural level of education in respect of the profitability of the land usage. The advantage of this group of enterprises altered from 2 PLN/ha CA in 2002 to 217 PLN/ha CA in 2000. In 2004, however, the second group of enterprises, wherein the administering was performed by the managers educated in other fields than agricultural, dominated over the first group (by about 420 PLN/ha CA). From the dynamic perspective, there were no fundamental dependencies in the investigated groups of enterprises. Nonetheless, the years from 2002 to 2004 showed a growing tendency of the profitability in cropland areas' indicator, greater in the enterprises administered by managers educated in other fields than agricultural (by about 422 PLN/ha CA).

The dependencies between the seniority and the level of land profitability were quite diverse (Table 1). There was no indication that the efficiency usage of cropland area would increase along with the lengthening seniority of the enterprise's manager. During the investigated years the effective use of cropland resources was noticed only in case of the enterprises with the average (the second group) and the longest seniority (the fourth group) of the managing persons. These groups of enterprises showed, moreover, a uniformed growing tendency of the cropland profitability indicator in the years from 2001 to 2004, though the increase was higher only in the second group of enterprises (by about 446 PLN/ha CA). In the remaining groups of enterprises a gross loss on the conducted activity was noticed in 2002. The enterprises which had the most stable level of the indicator in the investigated period were those administered by persons with the longest seniority, especially in the years from 2000 to 2003 (164-267 PLN/ha CA). In this group of enterprises the year 2004 showed an increase in the investigated indicator to 787 PLN/ha CA, though the amount was lower by about 373 PLN/ha CA from the highest ratio in the second group of the enterprises. It seems that the significant increase in the cropland profitability in the groups of agricultural enterprises in question might have been brought about by the direct surcharge to their cropland area in the form of a uniformed area payment and a supplementary area payment to the group of the basic tillage obtained after Poland's

¹⁵ In years 2000-2004 the number of managers with higher agricultural education formed accordingly: 101, 99, 100, 104, 99 – whereas with education different than agriculture: 22, 24, 22, 19, 19 persons.

¹⁶ The establishment of the seniority period of time used criterion is similar to the number of enterprises in particularly divided groups. The number of the seniority years accepted is presented as follows:

- 2000: I group – to 4 years, II group – 5-11 years, III group – 12-23 years, IV group – 24-42 years;
- 2001: I group – to 4 years, II group – 5-10 years, III group – 11-23 years, IV group – 24-40 years;
- 2002: I group – to 4 years, II group – 5-11 years, III group – 12-24 years, IV group – 25-41 years;
- 2003: I group – to 5 years, II group – 6-12 years, III group – 12-25 years, IV group – 26-42 years;
- 2004: I group – to 7 years, II group – 8-14 years, III group – 15-26 years, IV group – 27-43 years.

accession to the EU. Moreover, one should not forget that the companies' managers were entitled to receive the surcharges if they performed their activity in the areas with unprofitable conditions of farming (ONW). As regards cropland profitability in the years discussed, the highest dominance of enterprises administered by persons with the longest seniority over the enterprises from the third group was observed in 2002 (by 278 PLN/ha CA). The situation of the fourth group of enterprises developed relatively beneficially in relation to the group of those in which the managers had shorter seniority, since in the years from 2000 to 2003 the profitability of the land stayed equal or increased.

Table 1

The ground profitability ratio W (PLN/ ha CA)

Companies groups	Years/ the criterion for splitting the enterprises					2004-2000 (PLN)
	2000	2001	2002	2003	2004	
Level of education						
I	519	335	425	499	1456	937
II	107	122	6	113	701	594
II-I	-412	-213	-419	-386	-755	-343
Sort of education						
I	223	173	76	210	770	547
II	6	134	74	88	1190	1184
II-I	-217	-39	-2	-122	420	637
Seniority						
I	25	164	-50	92	909	884
II	244	91	156	255	1160	916
III	243	254	-96	56	583	340
IV	194	164	182	267	787	593
IV-I	169	0	232	175	-122	-291
IV-II	-50	73	26	12	-373	-323
IV-III	-49	-90	278	211	204	-253

Source: Own calculations

Table 2 presents the formation of the economic efficiency of work, calculated in hours as the relation of the sale profit (loss) to the labour expenditure. Over the investigated years the use of labour in the enterprises administered by persons with the average education was much more efficient on a higher level than in the enterprises administered by those with the higher education. One can observe, moreover, a growing tendency of the analysed ratio in the group of the enterprises that increased by about 312%, from 5 PLN/ha CA in 2001 to 20.6 PLN/ha CA in 2004. In the enterprises which had highly educated managers the engagement of work resources in the years from 2000 to 2003 was not as effective, as these enterprises obtained a substantial sale loss. It was only in 2004 that the ratio of economic work efficiency in this group of enterprises became positive and amounted to 2.3 PLN/h. At the same time, however, when one considers the economic work efficiency, the advantage of the enterprises whose managers had average education over the enterprises from the second group increased significantly and amounted to 18.3 PLN/h.

Table 2

The economic efficiency of work (PLN/h)

Companies groups	Years/ the criterion for splitting the enterprises					2004-2000 (PLN)
	2000	2001	2002	2003	2004	
Level of education						
I	11.0	5.0	8.3	8.6	20.6	9.6
II	-0.1	-0.2	-1.2	-0.6	2.3	2.3
II-I	-11.1	-0.7	-9.5	-9.2	-18.3	-7.3
Sort of education						
I	0.6	0.0	-0.6	0.6	3.2	2.6
II	0.8	1.6	0.9	-1.8	8.4	7.6
II-I	0.2	1.6	1.5	-2.4	5.2	5.0
Seniority						
I	0.5	0.7	1.2	2.0	8.9	8.4
II	0.5	0.4	1.7	1.2	6.7	6.2
III	1.9	1.2	-1.2	-1.1	1.7	-0.2
IV	0.2	-0.2	-1.3	-0.1	1.7	1.5
IV-I	-0.3	-0.9	-2.5	-2.1	-7.2	-6.9
IV-II	-0.3	-0.6	-3.0	-1.3	-5.0	-4.7
IV-III	-1.7	-1.4	-0.1	1.0	0.0	1.7

Source: Own calculations

As far as the economic work efficiency is concerned, the enterprises whose managers did not have agricultural education dominated quite visibly in all the years (except for 2003). Their highest ratio, amounting to 8.4 PLN/h, was noted down in 2004, while that of the enterprises, whose managers had agricultural education had decreased at the same time by about 5.2 PLN/ha. In the remaining years the differences between the groups established on the basis of the sort of their managers' education were relatively small, with no explicit dependencies in the dynamic perspective. Consequently, one can conclude that the sort of the acquired education diversified the efficiency of the labour usage only to a lesser degree.

The economic work efficiency in the enterprises divided according to the criterion of the seniority of managers was also quite diverse (Table 2). An effective use of labour resources was noticed only in the enterprises in which the managers had the shortest and the average seniority. The worst situation in this regard occurred in the fourth group of enterprises in which the usage of labour in the years from 2001 to 2003 was not as effective despite the longest seniority of the managers. The situation proved to be slightly more profitable in case of the enterprises with above-the-average length of the managers' seniority. Only in the group of the enterprises whose administering had the shortest seniority was a uniformed growing tendency of the economic work efficiency made note of to amount to 8.4 PLN/h, from just 0.5 PLN/h in 2000 to 8.9 PLN/h in 2004. It is noteworthy, however, that this group of enterprises achieved the highest economic work efficiency solely in 2003 and 2004, while the analysed ratio in the enterprises whose managers had long seniority was, on the whole, lower in the term examined (the years from 2000 to 2002). One must not forget that over the whole investigated period these enterprises demonstrated lower economic work efficiency in contrast to those administered by the managers with the shortest seniority. The highest advantage of the first group of enterprises in this regard occurred in 2004, amounting to 7.2 PLN/h.

The profitability of one's own capital ratio has been calculated as a relationship of the profit/loss with the value of the capital (Table 3). It was definitely much higher in the enterprises whose managers had an average level of education than in the other group in which the administering persons graduated from a higher education institution. One's own capital profitability in these enterprises was shaped in the years from 2000 to 2003 on a comparatively stable level (10.1-14.5%); the only significant increase to 25.4% was observed in 2004. Some similar tendencies have been noticed in the second group of the enterprises, in which along with a comparatively stable height of the analysed indicator until the year 2003 (0.1-3.3%), one's own capital profitability increased up to 13.1% in 2004. The scale of this increase was, however,

imperceptibly higher in the first group of the enterprises. The biggest difference between the groups of the enterprises established according to the criterion of their managers' education was most discernible in 2002, as it amounted to 12.7 p.p. %.

In the majority of the period covered by this research, as regards one's own capital profitability, the most dominating enterprises were the ones in which the managers had a non-agricultural education. It was especially noteworthy in the data from 2004, wherein the ratio in this group of the enterprises was 6.1 p.p. % higher than in the enterprises from the first group, administered by persons with an agricultural level of education. In the first group of the enterprises one's own capital profitability fell down to 1.9% in the period from 2000 to 2002, and then in the following years increased up to 14.4% in 2004. The second group of the enterprises' ratio proved to be much higher in the same year, amounting to 20.5%. These figures can be treated as relatively satisfactory when compared with the efficiency of locating one's own capital on the monetary market. The sudden surge of the profitability was brought about, however, by the introduction of the direct surcharges into the agricultural areas.

Table 3

The profitability of one's own capital (%)						
Companies groups	Years/ the criterion for splitting the enterprises					2004-2000 (p.p.%)
	2000	2001	2002	2003	2004	
Level of education						
I	14.5	10.1	12.8	12.4	25.4	11.0
II	3.1	3.3	0.1	2.6	13.1	9.9
II-I	-11.4	-6.8	-12.7	-9.8	-12.3	1.1
Sort of education						
I	5.9	4.4	1.9	4.8	14.4	8.5
II	0.2	5.0	2.4	2.0	20.5	20.2
II-I	-5.7	0.6	0.5	-2.8	6.1	11.7
Seniority						
I	0.8	6.0	-2.0	2.2	21.0	20.2
II	6.5	2.3	3.8	5.9	14.1	7.6
III	7.6	5.8	-2.5	1.6	13.4	5.8
IV	5.2	4.3	4.2	5.6	14.4	9.2
IV-I	4.4	-1.7	6.2	3.4	-6.6	-11.0
IV-II	-1.3	2.0	0.4	-0.3	0.3	1.6
IV-III	-2.4	-1.5	6.7	4.0	1.0	3.4

Source: Own calculations

The interdependencies between the profitability of the equity capital usage and the seniority of the person in charge of an enterprise were not unambiguous either (Table 3), which means that the seniority was not a basic factor reflecting the efficiency of the equity capital participation, though some dependencies were quite measurable. The capital was effectively used throughout the whole period in all the investigated

enterprises in which the managers had an average (the second group) and the highest (the fourth group) level of seniority. The highest profitability of using one's own capital within that period occurred in 2004 in the first group of the enterprises, amounting to 21%, which could be considered relatively satisfactory, as in the remaining groups of the enterprises the profitability reached only 7-8 p.p. %. The most stable figures of the investigated ratio were noticed in the enterprises administered by those with the longest seniority (4.2-5.6% in 2000 to 2003). Then again, the lowest profitability of one's own capital was observed in the period 2002 to 2004 in the third group enterprises, whose managers boasted the above average period of seniority. In these groups there were no uniformed dependencies in the formation of the investigated indicator in the dynamic perspective. The most visible aspect was the growing tendency of one's own capital profitability ratio in the period from 2002 to 2004 in all the groups of enterprises established according to the criterion of the managers' seniority.

Table 4

The quick financial liquidity ratio

Companies groups	Years/ the criterion for splitting the enterprises					2004-2000
	2000	2001	2002	2003	2004	
Level of education						
I	1.71	0.88	0.90	1.17	1.49	-0.22
II	0.55	0.66	0.62	0.75	1.12	0.57
II-I	-1.16	-0.22	-0.28	-0.42	-0.37	0.79
Sort of education						
I	0.70	0.75	0.68	0.75	1.16	0.46
II	0.51	0.59	0.60	1.00	1.22	0.71
II-I	-0.19	-0.16	-0.08	0.25	0.06	0.25
Seniority						
I	0.60	0.79	0.63	1.29	1.20	0.60
II	0.71	0.66	0.80	0.94	1.32	0.61
III	0.62	0.67	0.54	0.42	1.18	0.56
IV	0.65	0.64	0.70	0.88	1.05	0.40
IV-I	0.05	-0.15	0.07	-0.41	-0.15	-0.20
IV-II	-0.06	-0.02	-0.10	-0.06	-0.27	-0.21
IV-III	0.03	-0.03	0.16	0.46	-0.13	-0.16

Source: Own calculations

The quick financial liquidity was calculated as a relationship of the short-term duties and investments (means of payment and stock) to current liabilities. The recommended size of this coefficient oscillates on the level of 0.8 to 1.0. One should keep in mind, however, the relatively high trade differentiation in this respect. If the ratio falls below 0.7, one can speak about a serious threat of losing quick financial liquidity by the enterprise. Throughout the investigated period the enterprises with a higher ratio of quick financial liquidity were those administered by persons with the average education, with a uniformed growing tendency ranging from 0.88 in 2001 to 1.49 in the year 2004 (Table 4). This renders a significant improvement in the level of quick financial liquidity and its safe level, though 2004 brought about financial excess liquidity. The ratio was being shaped on a too low level in the enterprises administered by the managers with higher level of education in the period from 2000 to 2002, but in the following years it improved in this respect and reached 1.12 in 2004. The highest dominance of the first group of the enterprises over the second one, according to the criterion of the managers' education, occurred in 2000, amounting to 1.16. In principle, the

sort of the managers' education did not differentiate the level of quick financial liquidity. The period from 2000 to 2002 witnessed in this regard the enterprises administered by persons with the agricultural education take a slight advantage of the others, though in both cases the quick financial liquidity was too low. The enterprises which dominated in this respect were the ones administered by the managers with non-agricultural education. From the dynamic perspective, one could notice a uniformed growing tendency of the analysed ratio in the group of the enterprises administered by the persons with non-agricultural education (by about 0.71), while in the first group the quick financial liquidity was being gradually shaped on a relatively stable level, with a growing tendency from the year 2003 onwards.

The differences between the groups of enterprises established on the basis of their managers' seniority with respect to quick financial liquidity do not seem to be, however, significant (Table 4). The highest level of quick financial liquidity occurred in the researched period in the groups of enterprises in which the managers had the shortest (2001 and 2003) or the average seniority (the second group in the remaining years). The lowest level of the analysed ratio was observed in the year 2000 in the first group of the enterprises (0.60). In the following years the lowest quick financial liquidity appeared in the other groups of enterprises with longer seniority managers, until the fourth group's ratio amounted to 1.05 in 2004. The highest threat of the quick financial liquidity loss was recorded in 2002 and 2003 in the enterprises administered by persons with the above average period of seniority (0.42-0.54), while the highest quick financial liquidity occurred in case of the second group of the enterprises in 2004 (1.32). That year none of the groups faced any difficulties maintaining quick financial liquidity, as the ratio exceeded the value of 1.0. From the dynamic perspective, a systematic increase in the quick financial liquidity level was observed in the years 2001 to 2004 in the second (by about 0.66) and the fourth (by about 0.41) group of the enterprises. The remaining groups did not record uniformed tendencies in the formation of quick financial liquidity in this respect. Within the framework of the established groups of enterprises, the most important difference in the ratio level occurred in 2003 to the benefit of the fourth group, in relation to third one, and amounted to 0.46. To sum up, it can be concluded that the managers' seniority has not differentiated in any fundamental way the quick financial liquidity, though one should remember that generally its higher level has occurred, though imperceptibly, in the enterprises managed by people with shorter seniority.

Conclusions

The aim of the study has been to depict the interdependencies between the efficiency of the agricultural enterprises and their managers' level and sort of education, as well as their seniority. The following conclusions have been formulated on the basis of the conducted research.

1. The enterprises managed by people with an average education level have rendered higher level of cropland area and profitability of one's own capital. Definitely their higher economic work efficiency was one of its reasons. The enterprises administered by people with higher education proved to have, largely throughout the period, ineffective engagement of the labour in their operating activities. Although this group of enterprises had a growing level of quick financial liquidity, the enterprises managed by people with an average education level could boast a higher one, which may lead to a conclusion that the latter have been using a more conservative financing strategy of their activities.
2. On the whole, the highest profitability of the land usage has been achieved by the enterprises managed by persons with the agricultural level of education. The enterprises whose managers had a non-agricultural education level proved to dominate more with respect to the profitability of one's own capital and economic work efficiency, increasing thus the level of quick financial liquidity rendered by their enterprises.
3. There have been no unambiguous dependencies between the managers' seniority and the efficiency of cropland, work and use of equity capital. The dominating enterprises with respect to the ground profitability were those managed by people with the seniority in the section between 5 to 12 years and over 24. The economic work efficiency developed the least profitably in the enterprises administered by people with the longest seniority. Since the most diversified dependencies were the ones between the managers' seniority and profitability of own capital accompanied by financial liquidity of the enterprises, the former has proved not to be the most crucial factor shaping the efficiency of the agricultural enterprises' activities. It is important to create a teamwork system based on knowledge division with the most important part

played by attitudes, norms and means of behaviour presented by those in charge. Undoubtedly, the creation of a pro-development organisational culture requires new qualifications on behalf of the managers and a long-term cooperation with their workers.

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Microfinance – a Financial Tool for Developing Rural Areas

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Abstract

Financial services - such as savings accounts, mortgages at reasonable rates, consumer credit, and insurance, cheap money transfers - are widely accessible in urban areas, while in rural areas these services are rather poorly provided. The superficial reason for such bad financial services in rural areas lies in the idea that people with little money are not suitable enough clients for financial institutions.

Social discrepancies between urban and rural areas have been officially stated to exist in Latvia according to the report about social inclusion of the European Commission. Microfinance is seen as a widely accepted tool to combat these discrepancies. Nevertheless the vocabulary of microfinance can be understood only by professionals, even if it is intended for the masses. The sector is very fragmented, and there is not even a proper definition of the term yet.

Activities in the Microfinance sector identified in Latvia can be assigned to the following models:

- credit unions;
- downscaling of commercial bank activities;
- and NGO based programmes and projects.

Recommendations to improve the Microfinance sector in Latvia and especially to combine the existing trends of commercial banks to downsize their activities with supportive measures are:

- target subsidies toward institution building.
- providing incentives to encourage greater focus and innovation in the development of financial services for the poor;
- increasing cooperation and partnership, both among all types of microfinance providers and between them and mainstream banks, to increase financial service provision to the poor;
- improving the legal and regulatory environment for microfinance and for credit unions specifically

Within all these discussions it is very important to emphasize that the access to advice, education and training is regarded as equally relevant as the access to finance.

The advantage for Eastern Europe may be that there are much more industry sectors here to offer opportunities for rural development than in other regions of the world that suffer from bad infrastructures and low educational levels.

Keywords: Microfinance, poverty alleviation, social inclusion, credit unions

Introduction

The global promise of Microfinance is that high-quality affordable financial services can be made available to all those whom the mainstream financial sector considers not bankable, particularly to low-income households and micro-enterprises. Even the European Commission has recognised the merits and has made Microfinance a leading tool within the policy measures for social inclusion within the EU (European Commission 2005).

Microfinance became especially popular for Eastern Europe, Central Asia, the Caucasus regions and the Balkan area. Nevertheless it never was institutionalised systematically within the Baltic States yet.

Different profound studies have been carried out in regard to microfinance issues in Eastern Europe (Berryman M. (2004), Christen R.P. and Pearce D. (2005), Forster S., Greene S., Pytkowska, J. (2003), Graham M. (2005), Matul M. (2003), B.Wiberg (2005)) while researchers in Latvia have focused on issues of micro-credit and mentoring to support development of women entrepreneurship in regions (B.Rivža, M.Krūzmētra, L.Švānberga, E.Jermolajeva (2006), B.Rivža, M.Krūzmētra (2003)).

Aim of the research

The report of the EUROPEAN COMMISSION (2005) about social inclusion identifies on one hand a high percentage of undeclared work (14-20% of the GDP) and on the other hand a high discrepancy between

urban and rural areas in Latvia. Furthermore the report evaluates the national Latvian Action Plan to combat poverty as follows: “*the strategic approach is weak and (that) it lacks coherent measures and quantified targets*”. The need for programmes to balance the social discrepancies between rural and urban areas of Latvia is thus undisputed. Microfinance is generally a well accepted tool to address poverty issues.

The paper at hand tries to work out cornerstones for the improvement of Microfinance in rural Latvia.

Guiding questions for the research are:

- Which models exist for the Microfinance sector in the Central and Eastern Europe?
- Which models can the identified activities be assigned to?
- What might be the recommendations to further improve the Microfinance sector in Latvia?

Methods of research

In order to answer the questions outlined, various approaches and definitions of Microfinance are described at first in general and then with regard to the main characteristics of the sector in the Central and Eastern Europe. These elements of the research have been extracted from relevant research and literature sources for the Microfinance sector, especially the Consultative Group to Assist the Poor (CGAP) – a Microfinance platform of 33 international donor institutions active in poverty alleviation.

In order to identify the existing activities in Latvia several institutions from the financial sector as well as from projects for regional development were contacted. Some of the material is yet to be published. The article thus relies on few scientific papers and internal project reports that can be quoted for this sector. The validity of the conclusions and identified trends was discussed with practitioners active in the field of Microfinance on an international level.

Definitions

According to the evolvement of the entire sector the definition of Microfinance has changed over time. Early definitions saw Microfinance as “*small scale financial services – primarily credits and deposits - that are provided to people who farm, fish or herd; operate small or micro enterprises where goods are produced, recycled, repaired, or traded; provide services, work for wages or commissions; gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and other individuals and local groups in developing countries, in both urban and rural areas*” (Robinson 2001).

Since this is a very broad approach, other definitions try to emphasize the fact that Microfinance should focus on people that are otherwise excluded from ordinary financial services:

“*Microfinance refers to a range of services: the provision of small loans, savings facilities with a low minimum deposit, and other financial services such as insurance, leasing, money transfer, or bill payment designed appropriately for people who are on low incomes or financially excluded for other reasons*” (Rogaly et al. 1999).

Current trend in Microfinance go even beyond this definition and try “*to include micro-insurance, micro-leasing and payment transactions on small-scale basis*” (Kerer 2003) or encompass “*business development and other non-financial services that expand poor people’s participation in financial markets and increase the impact of the availability of financial services*” (Matul 2003).

Given the global spread of Microfinance approaches it is easily understood that there is no international valid definition of *small-scale* in terms of an absolute figure. As described in Chapter 0 the Grameen Bank in Bangladesh has an average loan size of USD 120, whereas the French ADIE (Association pour le Droit à l’Initiative Economique) has an average loan size between EUR 5000 and EUR 7500 (New economic Foundation 2005).

Historical overview **Global history**

The role of the financial sector for development was always undisputed. Based on experiences made in reconstructing economies destroyed by World War II the concept of financing development consisted mainly in transfer of capital to developing countries. Thus the financial sector in the 1960s and early 1970s was seen simply as a transferring channel. The materialization of this concept have been the foundations of development banks (African Development Bank, Asian Development Bank, etc.) and the establishment of large loan programmes to developing countries.

However, these programmes did not only suffer from high costs, low refinancing and constant need for subsidisation. They also failed to reach the population in need - the real poor. In terms of combating poverty these efforts were not only regarded as meaningless, but the financial sector itself was regarded as a constraint for development and an increase of economic discrepancies.

The paradigm shift went thus from “*financing development*” towards “*developing finance*” in the early 1970s. At this time the first micro-lending schemes were set up mainly in Bangladesh and Brazil. These concepts were based mainly on financial organizations applying a self-help approach.

In 1976 prof. Muhammad Yunus (the founder of Microfinance) started a successful micro-lending programme in rural villages in Bangladesh that gained such high pay-back rates and recognition that he founded in 1983 an institution that could run independent from developing funds: the Grameen-Bank that soon became the benchmark for Microfinance institutions. The Grameen Bank nowadays serves nearly 5 million borrowers (Yunus 2006) in more than 43,000 villages and more than 1100 sectors (Khawari 2004) with an average loan of USD 120 (Yunus 2006). Since then numerous international studies conducted on behalf of development institutions proved the contribution of Microfinance to economic development.

Evolution of Microfinance in Central & Eastern Europe and the New Independent States

In the Postsoviet countries Microfinance was not regarded as a useful tool provided by international institutions. Although some of the formerly existing savings and credit cooperatives were revived, there was not much international support for the idea of Microfinance. The demand of the people themselves made the story of Microfinance also a strong success story in the Eastern European, Balkan, Caucasus and Central Asian area. Nowadays 63 institutions in the region regard themselves as Microfinance institutions with an overall enterprise client number of more than 280,000 and more than 2 million active clients including savers (Forster et al. 2003).

This success led to the founding of a specific institution that could catalyse the need for education and experience exchange: in 1996 the Microfinance Centre for Central & Eastern Europe and the New Independent States (MFC) was founded in Warsaw.

Nevertheless, Microfinance institutions in the Eastern Europe and Central Asia are by far the youngest in the world and the least diverse in terms of institutional type. In client numbers, the regional Microfinance institutions are experiencing an average growth rate of 30% a year, suggesting a strong demand for Microcredit in the region. However, market penetration is still very low. Currently, estimates figure that only 5% of the potential demand is being met (Forster et al. 2003). Chapter 0 goes more in depth with regard to several existing models for Microfinance institutions in the region.

Microfinance and rural development

The Directorate-General for Employment, Social Affairs and Equal Opportunities of the European Commission identified Microfinance as sufficiently relevant to mandate leading Microfinance research organizations with the identification of policy measures that could foster further development of the Microfinance sector in Eastern as well as in Western Europe. This study was accomplished in 2005 (Siewertsen et al. 2005). The results of the SWOT analysis of the Microfinance sector is summarised in

Existing models for Eastern Europe

From a multitude of existing approaches Guzkowski and Holtman (2003) were able to elaborate four major Microfinance models for Eastern Europe.

- 1) Credit Unions
- 2) Downscaling Commercial Banks
- 3) NGO Microfinance Institutions
- 4) Microfinance Banks

Results of a SWOT-analysis of the Microfinance experiences (Siewertsen et al. 2005)

<p>Strengths</p> <ul style="list-style-type: none"> Encourages forums for informal economy If well implemented, provides good value for money per job /enterprise Fosters entrepreneurship Possible to reach difficult-to-reach target groups Could graduate people to bank lending (mainstreaming) Empowers and provides positive personal development Creates social capital Increases tax revenue, while decreasing social welfare payments Recycles public money / creates revolving funds Important for micro-enterprises economic growth 	<p>Weaknesses</p> <ul style="list-style-type: none"> Too many small-scale operators Hardly any effective and efficient blueprints available; lack of performance standards In many cases poor implementation, especially low number of loans and small geographical coverage Difficult to operate in welfare states with deep inactivity trap Lack of awareness and absence of performance standards for industry Non-recoverable business support costs or non existence of appropriate Business Development Services for micro-enterprise Limited range of products available Financial bridge is not working: graduation of clients to commercial banks does not work To be self-sufficient you need volume and high pricing
<p>Opportunities</p> <ul style="list-style-type: none"> Changes perception of self-employment and micro-enterprise (from a problem to an asset) Transforms welfare society into inclusive society Fosters sector development approaches (i.e., cultures, social enterprise) Identifies the most effective Microfinance models for specific context Better integration with local development approaches Diminishes role of loan sharks Improves understanding of active labour market policy Increases availability of local service providers 	<p>Threats</p> <ul style="list-style-type: none"> Wrong expectation to be the solution for rescuing the poorest of the poor Over-indebtedness and other negative side-effects if poorly implemented Public support without appropriate models and environment will deliver disappointing results Inappropriate actors entering the market (i.e., enterprise agencies, local authorities, predatory lenders) causing lower outreach for 'professional' Microfinance operators Short-term view inhibits sustainability Market distortion (subsidies) destroys good practise

Credit Unions

History of credit unions

The origin of credit Unions dates back to over 130 years. The German Friedrich Wilhelm Raiffeisen started the first savings and loan co-operative in 1869. His idea was to provide financial services to the large segment of society without access to mainstream banks and to empower the lower classes to reinvest their savings in their local communities. The Raiffeisen model of savings and loan cooperatives began to spread by the late 1800s—first to the Central and Eastern Europe, then to the remainder of Western Europe, and finally to Africa and the Americas.

Credit Unions were especially popular in Poland and in Ukraine, but also Latvia and Lithuania had a sophisticated credit union movement until World War II. The Soviet occupation led to a very centralised and regulated banking sector that made survival for rural credit unions difficult.

Since the fall of communism in the early 1990s, independent savings and credit institutions, owned and managed by their members, have re-emerged. This revitalisation of the credit union movement in the region is being supported by the World Council of Credit Unions (WOCCU) and Développement International Desjardins (DID). Also the European Bank for Reconstruction and Development (EBRD) focused on Credit Union programmes that were enforced via Associations of Credit Unions.

Legal structure

Credit unions are typically established under special legislation. Credit unions are owned by their members and are accountable to them. There is mostly a unifying professional or regional characteristic for its members. In many countries in the region, the relevant enabling legislation is poorly developed and has numerous ambiguities or restrictions concerning credit union operations.

Services

Most credit unions in the Eastern and Central Europe offer savings as well as loan services. They do not necessarily target poor people, but on the lending side, credit unions are specifically positioned to serve micro-enterprises and low-income clients in two ways. First, their lending requirements are minimal, application procedures simple and processing time short. Second, their loan sizes are generally limited and, hence, not attractive to larger borrowers.

Downscaling Commercial Banks

In the 1980s, during the early days of microfinance development, it was conventional wisdom that mainstream commercial banks would not be willing to engage in microlending because the small size of the loans made such lending prohibitively expensive. NGOs were seen as better placed to address the demands of the micro-enterprise market. Nevertheless also NGOs need money for institutional set-ups, branches and staff for a considerable outreach. Based on good results in Latin America the EBRD supported programmes for downscaling of loans and other services in Central Europe and Russia.

Most of these programmes have produced results, but turned out to be costly. Forster et al (2003) see two main reasons:

- a) since the loans from EBRD to the Banks were seen as official support, the Banks did not have a high priority for them and concentrated on their normal transactions with market suitable margins;
- b) bad timing – the programmes started too early, when the banks operating in the region still had to undergo big reforms to get rid of the Soviet structures. Since these reforms are over at least in the new EU member states, such programmes are seen as more promising.

Guzkowski and Holtman (2003) hope that local competition between commercial banks will give further incentives for successful downscaling programmes.

NGO Microfinance institutions

NGOs specializing in the provision of microfinance services have developed as part of a post-socialist rebirth of civil society in the region. Most focus on providing credit to low-income micro-entrepreneurs; they typically serve the low end of the micro- and small-enterprise spectrum, including informal-sector businesses. Very successful NGOs have been set up for Microfinance in Georgia and in the Balkan area.

Specific Microfinance banks

The microfinance-bank model has been the last to develop in the region. Microfinance banks aim to balance both commercial and social goals, applying a commitment to target-group outreach with a profit orientation. Their target clients typically fall between those of the NGO and of commercial banks. These banks offer loans to micro and small enterprises, but, as full-service banks, they also provide savings accounts and other services, such as money transfers and foreign currency exchange. This model is sometimes referred to as *greenfielding*. Institutions have been established, e.g., in Bosnia, Armenia, Moldova and Romania, but not in the Baltic states yet.

Microfinance activities in Latvia

Credit unions

The revival of credit unions was especially successful in Lithuania, where between 2001 and 2002 the number of members nearly doubled and the value of deposits grew by 170%. In Latvia the revival was taking place as well: at the end of September 2001 the Latvian Cooperative Credit Union Association counted 19 unions with more than 10,500 members (Forster et al. 2003).

Downscaling activities of commercial banks

Commercial Banks that started to go into the field of Microfinance are Paritate Bank and Unibanka. Seemingly Paritate Bank faces the usual high transaction costs for small loans, because the interest rate they charge comes up to 16%.

Unibanka is quoted to have managed downsizing programmes by credit scoring tools that are also supported by IT instruments (Salazar 2003). Nevertheless the sources do not indicate the loan sizes achieved with these tools.

NGO based activities

Based on experiences in other Scandinavian countries a specific programme for the economic wellbeing of rural women was established in 1999. Funds came from the Nordic council of ministers or the EU structural funds. Although not specifically set up as a Microfinance programme, the facilitation to microcredit access was a relevant aspect in the implementation of the project.

The major element of the project was to set up regional centres, where women can inquire for help to set up small business. Training courses and mentorship programmes formed another component of the services offered. The project lasted until 2005. A final report has not yet been published, but the existing publications about the project reported that 35 Microfinance groups could be established. The loan sizes in the first years were up to LVL 1000 (= EUR 1500) and later on specifically enlarged to LVL 10,000 (= EUR 15,000). The credits were supplied from the project itself with specific application procedures for the loan seeking women. The larger loans are worked out together with the Latvian Mortgage Bank.

Conclusions

With the majority of its institutions being less than five years old, the Baltic region exhibits many characteristics of a young sector: the landscape continues to be dominated by NGOs and Non Bank Financial Intermediaries that are primarily equity-based and donor-funded, and do not significantly access commercial debt markets or mobilize savings (Graham 2005).

Commercial banks are underway to tailor credit programs to the need of the poor. Nevertheless only few institutions offer a broad range of financial products that serve their poorer clients' diverse financial needs.

In order to improve this existing trend to even better serve rural development and social inclusion, also policy or regulatory measures are necessary. Examples are:

- target subsidies toward institution building;
- providing incentives to encourage greater focus and innovation in the development of financial services for the poor;
- increasing cooperation and partnership, both among all types of microfinance providers and between them and mainstream banks, to increase financial service provision to the poor;
- improving the legal and regulatory environment for microfinance and for credit unions specifically.

Within all these discussions it is very important to emphasize that the access to advice, education and training is regarded as equally relevant as the access to finance.

The advantage for the Eastern Europe may be that there are much more industry sectors to offer opportunities for rural development than in other regions in the world that suffer from bad infrastructures and low educational levels. Tourism, forestry and timber processing are only few examples that could enhance the list of income generating activities in the rural areas beyond agriculture.

Further options that still need more exploration and research might be the innovative use of grants and equity-type products, and to increase private social investment in the microfinance sector.

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Kopsavilkums

Finanšu pakalpojumi (krājkonti, aizdevumi ar pieņemamu procentu likmi, patērētāju kredīti, apdrošināšana, lēti naudas pārvedumi) ir plaši pieejami lielpilsētās, kamēr lauku rajonos tie ir pieejami nepietiekamā daudzumā. Šāda situācija sakņojas virspusējīgā uzskatā, ka cilvēki ar maziem ienākumiem nav pietiekami nozīmīgi finanšu institūciju klienti. Eiropas Komisijas ziņojumā par sociālo stāvokli Latvijā ir norādīts uz ievērojamām sociālām atšķirībām starp pilsētu un lauku iedzīvotājiem. Mikrofinansējums tiek atzīts par efektīvu instrumentu šādu sociālu atšķirību mazināšanai. Lai gan šis finanšu instruments ir domāts lielam cilvēku daudzumam, tomēr mikrofinansējuma termini galvenokārt ir saprotami tikai nozares profesionāļiem. Šī nozare ir ļoti fragmentēta un pat pašam nozares terminam nav pilnīgi skaidras un viennozīmīgas definīcijas.

Mikrofinansējuma aktivitātes Latvijā var tikt iedalītas šādos modeļos: kredītapvienības, komercbankas, Nevalstisko Organizāciju (NVO) programmas un projekti.

Priekšlikumi pasākumiem, kas jāveic Mikrofinansējuma sektora uzlabošanai Latvijā un ir galvenokārt paredzēti tam, lai uzlabotu un veicinātu jau esošās komercbanku darbības tendences, padarot to pakalpojumus vairāk pieejamus lauku iedzīvotājiem, ir šādi:

- novirzīt subsīdijas mikrofinansējuma institūciju veidošanai,
- veicināt banku ieinteresētību, piedāvājot tām motivējošu atbalstu, lai tās attīstītu piemērotus finanšu pakalpojumus, kas ir pieejami iedzīvotājiem ar zemiem ienākumiem,
- veicināt sadarbību un partnerību starp visa veida mikrofinansējuma nodrošinātājiem, tai skaitā arī bankām, kas sekmētu pēc iespējas plašāku finanšu pakalpojumu pieejamību laukos,
- uzlabot likumdošanas vidi, lai mazinātu šķēršļus mikrofinansējuma attīstībai, jo īpaši kredītapvienībām.

Attīstot mikrofinansējuma pakalpojumu pieejamību, liels uzsvars ir jāliek uz to, ka šim klientu segmentam ir tik pat nepieciešams nodrošināt pieeju padomam un arī attiecīgai izglītošanai. Austrumeiropas priekšrocība ir, ka šajā reģionā ir vairāk iespējamo dalībnieku mikrofinansējuma nodrošināšanā, nekā tas ir citos pasaules reģionos, kas cieš no sliktas infrastruktūras un zema iedzīvotāju izglītības līmeņa.

Role of Information and Communication in the EU Assistance Delivery to Agricultural Sector: Lessons from Poland

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Abstract

Through an examination of two paying agencies in Poland, this paper explores information and communication management in these agencies. The main aim of the research was to present the farmers' value of information provided by the agencies in terms of whether, and to what extent, it meets their expectations. The study found that even if the agencies could not quantify the value of information and information services, the perceived value among farmers was relatively high. As concerns the communication channels with the agencies, the study results indicate that there is low use of the Internet (27% of respondents). Just below half of those with Internet access stated they had accessed the agencies website.

Key words: information, policy delivery, government agency, agriculture, Poland

Introduction

Information has always been a beneficial asset to those who have it. Nowadays, information and communication (i.e. process by which information is exchanged between individuals) form an integral part in the process of any policy's implementation at every level of Government. It is assumed that information and communication on their own add value to the quality of Government programmes and projects.

Common Agricultural Policy (CAP) is an area in which Government or public administration plays significant role in formulating and delivering policy that requires considerable public expenditure.

In Poland, two accredited agencies responsible for administering and control of payments from the EU agricultural and rural budget, so-called paying agencies are involved in this process. They are:

- Agency for Restructuring and Modernization of Agriculture – ARMA (responsible for the disbursement of payments to the producers, IACS, rural development measures and Less Favourite Areas Measures);
- Agricultural Market Agency – AMA (responsible for dealing with trade policy mechanisms: intervention operations, quotas management system, export refunds, sugar fees).

In the case of European agricultural funds, the general objective of effective information and communication should raise public awareness of the issues and objectives both of agricultural and rural development policies, generate more applications for funding, report to the public about the results and hence, raise the quality of each policy output (i.e., its effects).

The rationale behind this paper is that, at the time, there was accidental literature concerning the interaction between information flows/communication process and agricultural policy delivery in Poland. These problems are not widely discussed. So, the author's attempt is to contribute to this discussion.

The general aim of this study is to explore the literature on role of information and communication in the policy implementation process, and to assess their role in an implementation of the EU agricultural and rural programmes in Poland.

The paper consists of two parts: theoretical and empirical. In the theoretical part, the author tries to answer the question: Why do we, either as citizens or economic actors, need productive information and communication? Some answers to this question are given by information economics being a branch of microeconomic theory that studies how information affects an economy and economic decisions. In the second part, the material based on the observations of public information activities of Government agencies in Poland is presented, as well as the results of empirical research conducted by the author in the form of interviews with farmers.

Self-assessment method for actual and/or potential beneficiaries of the EU programmes directed to agriculture was applied to evaluate both the quality and relevance of the information as well as the

communication (ex., web usability). The data were collected in the form of survey responses from a sample of 200 farmers. Personal interviews, nationwide in scope, were conducted in December 2006/January 2007 with the person at the farm who was responsible for its management (ex. for completing grants and/or subsidy claims). First, the number of farmers in districts (poviats) was selected using a nationally representative sampling according to the farm area, then a quota sampling was applied to select those farmers who were the clients of the agencies.

All respondents were asked, among others, about their interaction and contact with the agencies, at both the local office level and with the headquarters, connected problems or concerns; about the current access to the Internet and the agencies' websites; about the clarity of written and oral information etc. Respondents were also invited to indicate the importance to them of several criteria determining information provided by and communication with the respective agencies by giving each of them a score out of ten where 10 signifies 'extremely important' and 1 signifies 'extremely unimportant'. Additionally, they were asked to score their satisfaction levels associated with the agencies' performance on the same criteria giving a mark out of ten, where 10 signifies 'extremely satisfied' and 1 signifies 'extremely dissatisfied'.

The data obtained from the research were used to identify gaps in importance/satisfaction with information/communication, and to recognize opportunities for their improvement from the perspective of end beneficiaries of the EU programmes.

Role of public information activities of Government and its agencies

The literature on the role of public information (i.e., information shared by everyone) is numerous; see, for example, Édes B. W. (2000), Morris S. & Shin H.S. (2002), Garcia P. et al. (1997). Joseph Stiglitz (1975), for instance, for the past forty years, has spent a large part of his professional life on the 'economics of information', on the consequences of imperfections of information and on the incentives for gathering, and hiding, information, among others in public decision making.

Historically taken, late in the nineteenth century Government officials in some countries released that they needed trained and experienced people to prepare information for release to the public. For instance, in the USA, in the 1890's the Civil Service Commission prepared official reports and pamphlets on Government activities for public distribution. In 1913 the US Department of Agriculture initiated the programme of informing farmers. It was the middle of the previous century when it was generally accepted that whenever citizens were properly informed of Government activities, they were more likely to understand what was being done and why. When this is achieved, the average citizen is stimulated to cooperate with the Government agencies and to comply with the law more willingly (Fitzpatrick D., 1947-1948).

The next rationale behind public access to Government information is transparency or openness that facilitates the control of actions and inactions of public authorities. Additionally, it allows citizens an active participation in the political affairs; well informed people are able to participate in decision-making from the early phases onwards, and they have an opportunity to verify that public money is being spent in a good way. When the public is allowed to be aware of the development of any policy, it is then easier for Government to build support for putting it into operation and reaching the underlying objectives.

Last but not least, in the case of agricultural information (ex., agricultural market information), the private market would take action only where there is an adequate demand for this information and would not respond well where there is limited interest in particular information. If the niche in the market for this information is not being addressed by private providers, the Government role should be to satisfy this niche. Similarly, pricing can become a barrier when Government information is only available through a private-sector, so to eliminate this barrier the Government should offer information at a reasonable cost for its end-users (e.g., farmers) and intermediaries (e.g., consultants who serve as the main suppliers of information to the end-user).

In recent years, the most significant transformation in communication between citizenry and government has been through expanded use of Internet. The Web made it possible to increase the amount of information the Government agencies distribute about their programmes, activities and decisions. Nowadays, most people would agree that the new information technologies hold vast potentials for improving public administrations, and that better administrations in turn would have a positive influence on the economy and on society (for example, Picci L., 2006; Bimber B., 2003).

From the economic point of view, individuals with accurate information can make rational decisions

that allow them to adjust their actions to the circumstances at hand. In all organizations, imperfect information gives rise to what economists call agency problems. In public sector organizations, agency problems may give rise to a disparity between the actions of those governing and those they are supposed to serve (ex., farmers).

The basis for economic analysis of information is the belief that information has economic value because it allows individuals to make choices that yield higher expected pay-offs or expected utility than they would obtain from choices made in the absence of information. As the value of publicly provided information is difficult to estimate, it is often underestimated. Economists have developed a framework to study the value of information in specific contexts (Garcia P. et al., 1997; Howard W. et al., 1996). However, accessible methods to measure degree to which information could support different citizen-government agency relationships are limited due to the lack of a theoretical framework for placing value on information. In most studies, information is valued on a quantity scale. So, this study relies on this approach.

Results and discussion

Disseminating information to various users by agricultural agencies in Poland

There is no doubt that Government agency-supplied information is often one opportunity for farmers and other users to have access to suitable information (ex., about agricultural policy, agricultural markets etc.). Likewise, Polish citizens have a right to freely available Government information resulting from their taxpayer investment.

Bearing this in mind, information and publicity of the aid granting possibilities is one of the main tasks of ARMA and AMA.

Publicity and information measures are implemented by several tools aimed at specific target groups, such as: (i) electronic information system – information on conditions of granting aid, eligibility and selection criteria, online application forms, technical advice, frequently asked questions; (ii) bulletins (published in printed and electronic form) for a wide range of recipients including information on conditions of granting aid, articles including analyses, comments and opinions, etc.; (iii) information and consulting or advisory points in each office, responsible for providing information about opportunities for utilizing support, assistance to applicants in the preparation of their applications, providing information and technical advice; (iv) tools aimed at the general public, such as press articles, television and radio broadcasts, conferences, trade exhibitions, reports, brochures, etc.

The web sites of the agencies provide information about the organizational structure, activities, tasks management, and internal and regional offices. They also provide the public with up-to-date information on programmes and rules of granting aid under each measure. In addition, the sites offer access to full-text reports on agencies activities, current and back issues of the Information Bulletin, and information brochures. Besides, they offer site maps and a collection of links. The sites are available in Polish, together with general information in English.

Furthermore, the agencies supply potential beneficiaries with technical information and with the procedures for applying for specific support through information and publicity seminars and workshops. With regard to dissemination of information on the aid available from the EU funds, the partners of the agencies are extension units called Agricultural Advisory Centres.

Furthermore, the both agencies have press offices, and provide a place for specialists who engage in the political interpretation of policy. These individuals carry the title of ‘press attaché’. Press offices are managing press contacts, and they are in regular contact with the media.

As concerns the transparency on CAP payments, since 2007 ARMA has published, on its searchable website¹⁷, the list of all end-beneficiaries of direct payments (single area payments and complementary national direct payments) and sugar payments. Regrettably, each recipient data set includes only name, locality, the amount of payments, and year of payment. Deficiency includes the lack of public information on which amounts do beneficiaries receive in absolute terms with respect to the number of workforce, size of farm, type of farm (ex. arable or cattle farm) and farming method (conventional or organic). The fact that transparency became one of the key issues being discussed within the public debate and that media became

¹⁷ At <http://www.arimr.gov.pl/index.php?id=64&id1=0&id2=0>

very involved in this subject offers grounds to be optimistic that Polish citizens will receive more information who exactly is reaping benefits from agricultural subsidies and which agricultural methods are supported on.

Respondent socio-economic characteristics

The survey found that a majority of farmers (64%) were aged 40 years and over. Forty-five percent of all respondents had achieved a high school degree or higher educational level. The survey respondents were predominantly male (70%). Approximately 63% reported that they had been operators (managers) of the agricultural holding for more than 10 years and respectively 80% that they had been in farming for 10+ years. Just under half of the respondents (45%) farm less than 5 hectares. About 60% stated that they represented commercial farms, i.e., produced mainly for the market. Respondents were asked to identify the type of schemes they applied for and benefited from. As it regards ARMA, direct area payments (90%) and Less Favoured Areas Support Scheme (21%) were most commonly indicated, whereas in the case of AMA those included intervention buying-in of cereals by the agency (35%) and milk quota scheme for individual producers (32%). Only small percentage of survey respondents believe that the financial condition of their farm does not depend on activity of the agencies (ARMA: 5%, AMA: 11%).

The farmers speak: Contact with agencies

The ARMA organizational structure includes the headquarters in Warsaw and regional/local structures – 16 regional offices and 314 poviats offices. Correspondingly, AMA has a head office in Warsaw and 16 regional branches. The average number of full-time equivalent persons employed in the agencies during 2006 was as follows: 9970 in ARMA and 1332 in AMA.

In opinion of 43% of interviewed farmers, it is important to have a local office with local knowledge. Respondents were asked whether they had made use of an intermediary when dealing with the agencies or whether they dealt with them themselves. The majority (ca 80%) dealt directly with the agencies.

Our study also finds that socio-economic variables insignificantly affect various patterns of contact with the agencies. Farmers generally prefer in-person contact with the agencies. Those, who have a high and higher school education, are more likely to use other forms (Table 1).

Table 1

Distribution of respondents by channel of contact with the agency staff (%)

Mode of contact	Total N=200	Gender		Age		Education				
		M	F	18-40	40+	Primary	Vocational	High	Higher	
<i>Agency for Restructuring and Modernization of Agriculture</i>										
Office visit	55	57	51	51	57	65	61	47	41	
Telephone	7	6	10	13	4	9	3	8	18	
Letter	1	1	0	0	2	4	1	0	0	
Internet (e-mail)	1	0	3	0	0	0	0	3	0	
Lack of answers	36	36	37	36	37	22	35	42	41	
<i>Agricultural Market Agency</i>										
Office visit	73	71	77	70	75	70	81	68	53	
Telephone	37	39	32	40	36	26	36	39	47	
Letter	16	19	8	16	16	13	18	15	12	
Internet (e-mail)	2	1	2	0	1	4	0	1	0	
Lack of answers	7	7	7	9	6	13	3	7	18	

Source: Own research

Farmers were asked how often they had contacted with the agencies. The majority had contacted them twice annually (ARMA – 31%; AMA – 30%) and quarterly (ARMA: 31%, AMA: 27%). Only a minority of respondents had made personal contact with the staff at headquarters of ARMA (16%) and AMA (9%).

The analysis found that the people at the agencies as well as ease of contacting someone who can help are major drivers of farmers' satisfaction. According to respondents the staff of the agencies is knowledgeable about programmes offered. Above all, the accuracy of claim processing is seen as an

essential requirement for the agencies since the biggest gaps between the ratings awarded for importance and satisfaction were in relation to this feature (Table 2).

Ratings yielded by ARMA from its customers are generally higher than those obtained by AMA. One reason for this might have been that only ARMA provides local (poviat) offices that serve farmers, and consequently facilitate closer relationships with them.

One quarter of the survey respondents indicate that in 2006, compared to previous years, AMA has improved its performance in the area of farmers' direct contact with the office staff. In the case of the ARMA this share was again higher at 37%.

Table 2

Farmer's evaluation of contact with the agencies in Poland

<i>Features</i>	<i>Importance (1)</i>		<i>Satisfaction (2)</i>		<i>Gap (1 minus 2)</i>		<i>Satisfaction index</i>	
	Average score (scale of 1 to 10)						(range 1-100)	
	ARMA	AMA	ARMA	AMA	ARMA	AMA	ARMA	AMA
Ease of contact	9.0	9.0	8.4	8.1	0.6	0.9	76.1	69.1
Knowledge of staff	9.3	9.1	8.3	8.4	1.0	0.7	77.5	73.5
Keeping promises	9.3	9.1	8.1	8.1	1.2	1.0	74.6	68.9
Query handling	9.1	9.3	8.0	8.3	1.1	1.0	54.8	54.1

Source: Own research

The farmers speak: Sources of information about agencies and their activities

The main source of information about activities of the agencies were nation-wide channels of State television (38%), local government offices at gmina level (35%) and informal channels of communication e.g. family, friends, neighbours (32%).

To assist farmers in the introduction of CAP in Poland, various public meetings, trainings and consultations had been organized by the agencies. The proportion of respondents attending some of these activities provided by ARMA and AMA was 54% and 34% respectively. Respondents who had attended them were asked to rate their own satisfaction on a scale of 1 to 10 where 1 was very dissatisfied and 10 was very satisfied. The satisfaction with ARMA (7.4) was slightly higher in comparison with AMA (7.2).

The farmers speak: Internet use

Of the 200 farmers interviewed, only 27% have been accessing the Internet when the interview took place. Polish rural areas are a frontier in Internet use, since this percentage is smaller compared to all households as well as to the enterprises in Poland. According to Eurostat (2006), at the beginning of 2006 there were 36% of households and 89% enterprises connected to the Internet in Poland. In 2006 the percentage of individuals aged 16-74 who used the Internet in relation to public administration (in last 3 months) was only 5.8% (the EU-25 = 23.8%), whereas the proportion of enterprises was 61% (the EU-25 = 63%)¹⁸.

Those respondents who made use of Internet were then asked if they used the agencies web-sites and what they used them for. About 48% had accessed the website of ARMA and 45% of AMA. In the case of ARMA, the key usages were downloading forms (68%) and looking for guidance information on application forms fulfilling (61%). The AMA website was predominantly used to download application forms (46%) and to read news and announcements (42%). Those who had used the websites of the agencies gave the information obtained an average satisfaction rating of 7.7 (ARMA) and 7.9 (AMA) out of 10. As much as 64% of those gaining access to ARMA website and 30% of those who use AMA website would find on-line services useful, if they were available.

¹⁸ Internet activities related to public administration:
[http://www.czso.cz/csu/2006edicniplan.nsf/engt/C8002E368B/\\$File/970306k3-EN.pdf](http://www.czso.cz/csu/2006edicniplan.nsf/engt/C8002E368B/$File/970306k3-EN.pdf)

The farmers speak: Satisfaction with obtaining information

Respondents were asked to indicate the importance of and the satisfaction with information provided by the agencies. The levels of satisfaction with the clarity of oral information and written information were slightly lower than their importance levels, as shown in Table 3.

Table 3

Farmer's evaluation of the information provided by the agencies in Poland

<i>Type of information</i>	<i>Importance (1)</i>		<i>Satisfaction (2)</i>		<i>Gap (1 minus 2)</i>		Satisfaction index	
	Average score (scale of 1 to 10)						(range 1-100)	
	ARMA	AMA	ARMA	AMA	ARMA	AMA	ARMA	AMA
Oral information (clarity)	9.2	9.1	8.2	8.2	1.0	0.9	75.7	72.3
Written information (clarity)	9.1	9.1	8.2	8.2	0.9	0.9	74.1	70.0
Application forms (ease of completing)	9.1	9.0	7.7	8.2	1.4	0.8	71.0	67.0

Source: Own research

It is difficult to stress which sources of information (oral or written) play the most important role for farmers. However, the gaps between the ratings awarded for importance and satisfaction suggest reinforcing the need for the agencies to ensure that information provided to farmers is easy to understand, clearly written and covers all the topics of relevance.

The research found, by some surprise, that farmers generally were not more likely to pay more they expected the agencies gave them in terms of quality of services provided.

Summary, conclusion and recommendations

Successful governance models in the agricultural sector are those based on the farmer-focus approach that should be on recognizing the different needs of the agrarian and rural community, specifically, which governance-related services are most valuable for them. The author of this paper expected, through the medium of survey, to help Polish farmers to put into words what they thought about and provide the opportunity of letting their opinions be known to the government agencies and to anyone who was or should be interested in.

In summary, the research findings indicate that: (i) the top channels of information included State television, local government offices at the commune (gmina) level as well as family, friends and neighbours; (ii) farmers appreciate accuracy and reliability of oral and written information. They treasure the agencies for information clarity, yet they give relatively low scores on ease of completing of application forms (an average score of less than 8 on a 1-10 scale); (iii) the agencies offer multiple channels of communication, including counter services, e-mail, telephone, fax and traditional correspondence; (iv) respondents are generally satisfied with such service standards as 'ease of contacting appropriate person', 'knowledge of staff', 'keeping promises and commitments' and 'query handling'; (v) there is low use level of the Internet by farmers (27% of total). Just below half of those with Internet access stated they had accessed the agencies websites; (vi) it seems that the agencies are at first stage of E-Government that is they predominantly provide information and publications for public access, grant application forms and links to existing websites; (vii) There is lack of full transparency over payments to farmers and to other beneficiaries of CAP despite the truth that ARMA has partially disclosed information on CAP beneficiaries.

Based on these conclusions, the author recommends the following actions directed toward making further improvements in the management of information and communication: (i) the agencies should expand their online presence with the launch of specific websites where a public debate could be held and judgments on a variety of matters regarding their activities could be polled; (ii) they should also use higher levels of

user interaction, i.e., expand two-way communication between individuals and the agencies via Internet; (iii) the new communication channels available would lead to a better accessibility of information to farmers providing that the Internet usage in agriculture is rising. Additionally, the agencies would be able to take advantage of economies of scale presented by the online environment; (iv) public information funding and financial assistance packages to support the development of Internet services for rural communities should be most important priorities in agriculture; (v) the agencies should increase transparency over CAP payments to be more accountable to the public.

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Analysis of Local Governments Basic Budgets in Latgale Region (the Case of Daugavpils City)

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Summary

The budget and its formation – is an issue that worries everyone nowadays. One of the most important questions is a problem of local government budgets, which reflects the income of municipalities and their expenditure. Every member of a municipality feels the effect of the local budget, and therefore it is necessary to reveal the regularities and problems connected with the revenue collection, as well as its optimal distribution.

The cities and towns in Latgale also have a number of problems in this sphere. As it can be seen from the budget documents of cities and towns in Latgale region, there is a problem of how to divide limited resources among various spheres – national economy, social sphere and culture (education), and others.

Evaluating the situation in the sphere of income, the author of article can conclude that in economically developed municipalities the budget is determined by tax income and non-tax revenue. But economically less developed municipalities are more dependent on subsidies and special purpose grants of other budget levels. The regularities of resource distribution are the same in all municipalities of Latgale: the main flow of expenditure channels to the social sphere and culture (especially education), and then to the sphere of national economy, administrative expenditure and others. Unfortunately, it is not possible to speak about intensive development of these spheres yet, credits and investments are necessary for the economic growth of various regions of Latvia.

Key words: municipality basic budgets, revenues, expenditures, subsidies, earmarked subsidies

Introduction

Latgale region consists of Balvi, Daugavpils, Ludza, Krāslava, Preiļi and Rēzekne districts and Rēzekne and Daugavpils cities.

The general economic situation in Latgale region is characterized by the same trend as the whole country both in terms of economic rise and crisis. However, economic situation in Latgale with its positive development tendency is worse than in the rest of Latvia on average. Latgale is a region with a significant potential of economic development. Creation of favourable entrepreneurship surrounding is necessary for its further development. Areas with the highest added value are the following: processing industry, which is dominated by wood processing, food production, production of electric appliances, transport and communication, as well as trade. However, the biggest attention in the region should be paid to the development of social infrastructure and services.

There are two important cities in the region – Daugavpils and Rēzekne, six districts, and numerous smaller in terms of population and economic potential towns such as Kārsava, Ludza, Zilupe, Dagda, Krāslava, Viļāni, etc. In rural territories of Latgale rural municipalities often unite thus constantly changing the information about the number of rural municipalities.

Carrying out the analysis of general economic situation in the region encourages an interest and necessity to research funding sources of the activity mentioned and budget analysis of the region's local governments. The budget of the municipalities reflects their income according to the types of income and its usage. The budget of municipalities can be considered as a plan for using possible finance resources to reach the goals set.

As it has already been mentioned, there are two cities significant for the country in Latgale region – Rēzekne and Daugavpils. Besides, each resident of Daugavpils and its region is under the influence of Daugavpils and Daugavpils regional budget; therefore the author of the article can take the basic budget of Daugavpils as a basis of the research.

The aim of the research is to investigate issues of formation and optimal distribution of local government budgets in Latgale region. This objective determined the tasks of the research – analysis of the basic budget of Daugavpils city in the period of 1995-2006, investigation of the regularities of budget formation, and distribution of resources of local basic budgets in other municipalities of Latgale and their changes during the last years.

The statistical data grouping, comparing, analysis and synthesis, and graphical methods were used in researching and comparing the local government basic budgets in Latgale region.

1. Analysis of Daugavpils City basic budget

According to statistic data the population of Daugavpils by 2006 amounted to 108.1 thousand people, and this number keeps decreasing under the influence of demographic crisis. Daugavpils is the biggest city in Latgale region and it is the second largest city in the country in terms of size and economic potential. But still there is a range of unsolved problems, the main of which is insufficient funding for keeping the city infrastructure at the European level.

Table 1

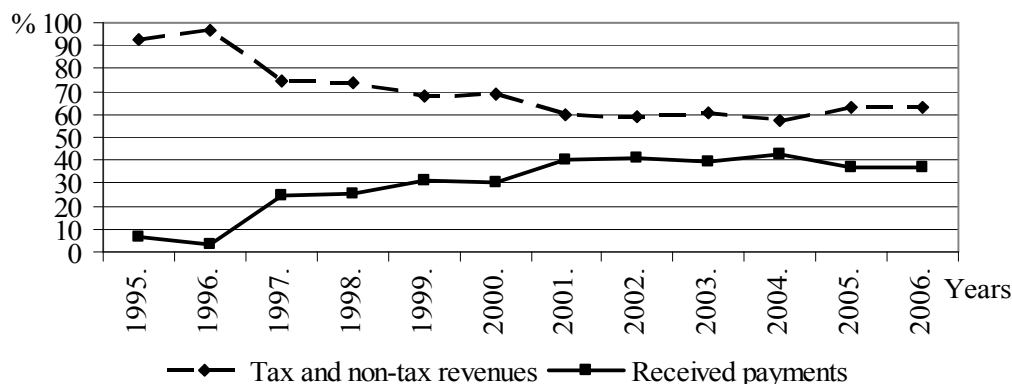
Revenues of Daugavpils City basic budget (1995-2006)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Revenues, LVL '000	9244	10430	14208	15126	14595	14994	15407	18613	21561	24832	27148	36179
Rate of growth, %	130	147	200	213	206	211	217	262	303	349	382	508

Source: Daugavpils City budget documents (1995-2006)

Calculations were made on the basis of Daugavpils City budget documents (1994–2006). Baseline year: 1994.

Table 1 shows that from 1994 to 2006 the budget income has increased by more than 5 times. The analysis of the city budget revenue structure by years (Figure 1) shows that the most important sources of revenues are tax and non-tax income, and received subsidies and earmarked subsidies from the higher level budgets.

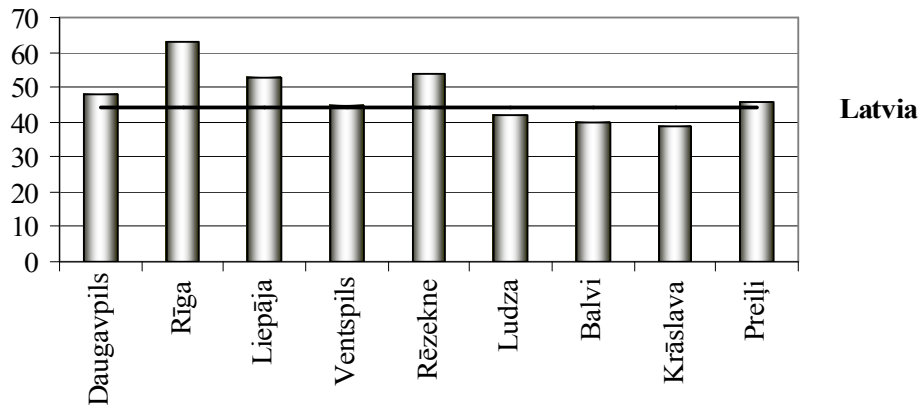


Source: Daugavpils City budget documents (1995-2006)

Figure 1. Revenue structure of Daugavpils City basic budget (1995-2006, %)

In the years 2002-2006 the share of tax and non-tax income in Daugavpils basic budget has levelled off at the rate of 57%-63% (tax – 48%-54%, non-tax – 8%-9%). However, despite the fluctuations, tax income is growing each year due to the improvement of economic environment where alongside with the business development the budget income also increases.

While analysing separate types of taxes we see that similar to the most Latvian cities, personal income tax is the main source of income in the basic budget of Daugavpils municipality. Its dynamics in the time period mentioned is similar to other tax incomes.



Source: Daugavpils City budget documents (1995-2006), „Pašvaldību budžeta gada pārskati” (2001, 2006)

Figure 2. **Proportion of revenues of personal income tax in Latvian municipalities (2006, %)**

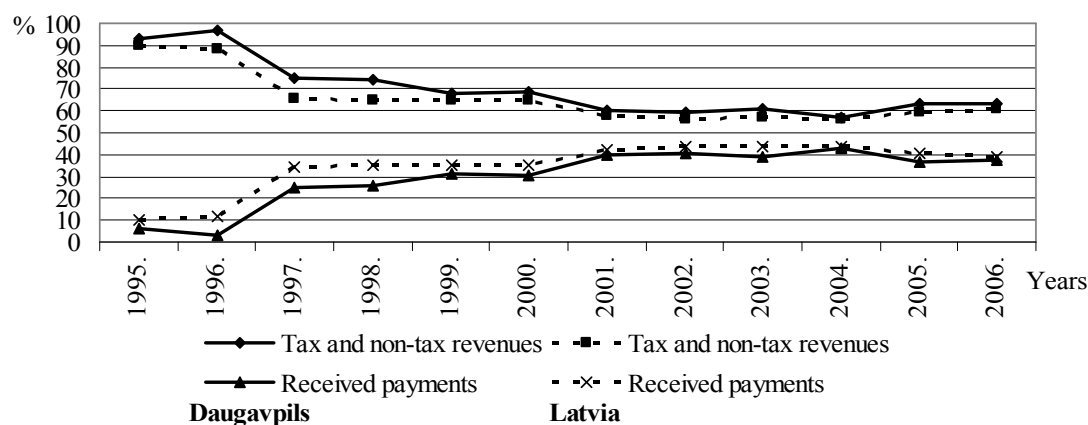
Currently three local governments provide their own administration of income tax. These are Rīga, Liepāja and Ventspils. As it can be seen in Figure 2, in 2006 the share of income tax in Rīga and Liepāja municipalities' basic budgets was higher than average in the state and higher than in other municipalities, which is mostly affected by higher salaries in the capital and effectiveness of decentralised administration. In Ventspils municipality it makes up 45%, which is an average indicator in all Latvian local governments on the whole. In Latgale region the share of income tax in the basic budget is the following: in the basic budgets of Daugavpils, and Rēzekne cities, and Preiļi area this indicator is higher than the average one in the rest of the country, in the other three local governments (Ludza, Balvi and Krāslava areas) the income tax indicator is lower than in the rest of the state. A relatively high share of income tax in the basic budgets of Rēzekne and Daugavpils municipalities can be explained by active economic processes and business development in these cities.

A significant part of tax income is made up of property tax. In Daugavpils municipality basic budget the income from property tax constitutes an important element and is at the rate of 4%-6%, besides, the share is decreasing each year except for the year 2005 when constituted 5% of the total budget income.

The second most significant source of income is made by the payments received by the municipality, basically subsidies and earmarked subsidies. A significant regularity can be observed here: the lower share of tax and non-tax income in the total budgets, the higher share of subsidies and earmarked subsidies (Figure 1).

In general it can be concluded that an income tax (44%-48%) is the most important source of taxes and total income. However, problems are connected with the fact that this tax is transferred from the State distribution account, which does not allow municipalities to be aware of their tax payers, to create the link between the municipalities and tax payers, to plan tax income, to be aware of tax debtors, to form the dialogue with entrepreneurs of all levels and inhabitants, as well as to acknowledge the number of working vacancies and flow of labour force.

While researching the income structure of Daugavpils municipality basic budget in the context of basic budgets of Latvian municipalities (Figure 3), the author of the article can see that the share of tax and non-tax income in Daugavpils municipality during the whole period researched is higher than the average in Latvia, which gives evidence to the municipality's financial capacity, an ability to earn funds for financing its own activity. In its turn, the share of the received payments is lower than on average in Latvia, which shows Daugavpils municipality's smaller dependency on the state earmarked subsidies than on average among Latvian local governments.



Source: Daugavpils City budget documents (1995-2006), „Pašvaldību budžeta gada pārskati” (2001, 2006)

Figure 3. **Proportion of tax and non-tax revenues and received payments in total revenues of the basic budgets in Daugavpils and Latvia (1995-2006, %)**

While studying the planning of expenditure, the author of the article can see that the biggest problem is insufficient volume of funds. Any local government has to make a serious choice – where to direct collected funds and in which volume.

Table 2

Expenses of Daugavpils City basic budget (1995-2006)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Expenses, LVL '000	9315	11770	14404	15126	14595	15201	15842	21133	23998	24642	26787	36874
Rate of growth, %	132	167	205	215	208	215	224	299	340	349	380	522

Source: Daugavpils City budget documents (1995-2006)

Calculations were made on the basis of Daugavpils City budget documents (1994–2006). Baseline year: 1994

Expenses of Daugavpils city municipality (Table 2) during the period from 1994 to 2006 have grown except for the year 1999, which was connected with the income decrease: the less it was earned, the less it was possible to spend.

The most important expenditure flow is funding social and cultural activity such as: education, health care, social insurance and social security, leisure, sports, culture and religion. Among the activities mentioned the dominating place undoubtedly belongs to education. In 2006 expenses on education significantly rose although its share in the total expenditure dropped, which was due to a significant rise of expenditure share in the sector of transport and communication that resulted from big financial investment in street and road maintenance, and capital repairs. The share of health care funding is within 2%-4%. Expenses on social insurance and social security make up 8%-12%.

Table 3

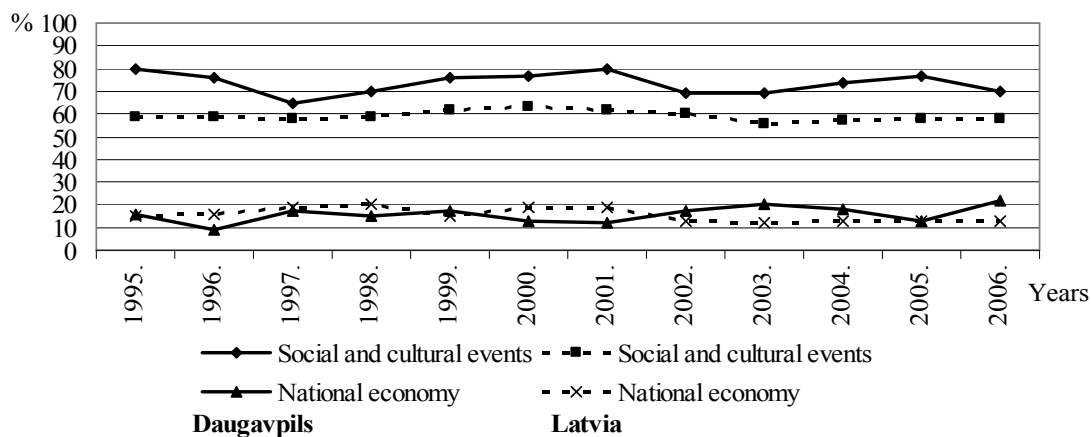
Expenditure structure of Daugavpils City basic budget (1995-2006, %)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Economy												
Social and cultural events					75.7	77.4	80.5	68.8	68.5	73.9	77.7	70.1
Public administration authorities	3	2.1	3.3	3.4	3.6	3.7	4.0	4.0	4.1	5.1		
Contributions to the Equalisation Fund	–	11	11.8	1.8	–	–	–	–	–	–	–	–
Other expenses	1.5	2.1	2.6	9.8	3.2	5.4	3.3	9.3	7.2	2.9	3.2	2.6
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Calculations were made on the basis of Daugavpils City budget documents (1994–2006)

The second important flow of expenditure is economic expenditure with a share of 9%-18% in the total budget, reaching its maximum level in 2006 with 21.8% due to rise of investments in streets' and roads' reconstruction.

The share of Daugavpils Council's funds is surprisingly small – 2.1%-4% until 2003, and the same level was maintained for several years, which is not typical for any other Latvian local government. However, for the last two years this expenditure item started increasing and reached 5.5% in 2006. Expenses on law and order protection are prescribed in Daugavpils municipality budget as well, and during the researched period they have grown from 0.2% to 1.5% of the total expenditure of the municipality budget.



Source: Daugavpils City budget documents (1995-2006), „Pašvaldību budžeta gada pārskati” (2001, 2006)

Figure 4. Proportion of expenses of social and cultural events and economy in total expenses of basic budgets in Daugavpils and Latvia (1995-2006, %)

In general, it can be seen that structural distribution of the municipality expenditure is approximately the same during the whole researched period, the leading position being held by expenditure allocated to funding of social and cultural events (with domination of education), then economic sector, executive power and other expenditure items follow. The decrease of some expenditure items was caused by the share rise in other fields.

While analysing two main expenditure flows in the basic budget of the local governments – social sphere (education, health care, social security, leisure, sports, culture, religion) and economic sector – we can see that expenses on social sector in the basic budget of Daugavpils significantly exceed the given indicator in Latvia, which again confirms investment of Daugavpils municipality in social sphere. The share of expenditure in economic sector fluctuates, although recently the predominance of this expenditure in Daugavpils has been observed, which is due to rising investment of the municipality in economic sector (repairs of streets and roads, maintenance of residential area, repairs).

It should be concluded that during the researched period a deficit in the basic budget of Daugavpils local government can be noticed. However, the deficit of the budget cannot be considered only as a negative phenomenon. It can encourage more effective economic activity, help municipalities improve their income base, economize funds and search for other sources for covering expenditure.

Table 4

Financial balance of Daugavpils City basic budget (1995-2006, LVL '000)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Revenues	9244	10430	14208	15126	14595	14994	15407	18613	21561	24832	27148	36179
Expenses	9315	11770	14404	15126	14595	15201	15842	21133	23998	24642	26787	36874
Surplus (+) / Deficit (-)	-71	-1340	-196	0	0	-207	-435	-2520	-2437	+190	+361	-695

Source: Daugavpils City budget documents (1995-2006)

2. Basic budgets of cities and towns in Latgale region

After studying the situation in Daugavpils municipality there arises a necessity to clarify laws that work while forming basic budgets of other Latvian local governments.

Table 5

**Financial balance of basic budgets of cities and towns
in Latgale region (2001, 2006, LVL '000)**

	Daugavpils		Rēzekne		Ludza		Preiļi		Krāslava		Balvi	
	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006
Revenues	15407	36179	5709	13282	1483	3750	2077	3680	1975	4131	1541	3629
Expenses	15842	36874	5718	13389	1414	4502	2401	3674	2065	4525	1664	3601
Surplus (+) / Deficit (-)	-435	-695	-9	-107	+69	-752	-324	+6	-90	-394	-123	+28

Source: Daugavpils City budget documents (1995-2006), „Pašvaldību budžeta gada pārskati” (2001, 2006)

As it can be seen, there was a significant rise both of income and expenditure in all local governments of Latgale region in 2006 compared to 2001, besides the budgets' increase of Krāslava and Preiļi was determined by their consolidation with other local governments, therefore in 2006 we analyse the basic budgets of Krāslava district and Preiļi district. The biggest budgets among cities of Latgale region belong to Daugavpils and Rēzekne. There was a deficit of the basic budgets in all cities in 2001 except for Ludza. In its turn, in 2006 a financial balance of basic budgets was positive in the budgets of Preiļi and Balvi districts, in other four cities of Latgale region the expenditure exceeded income. Besides, the author of the article should mention that in Ludza the volume of deficit in 2006 was quite big – 20% of income of the basic budget, in its turn, in the basic budget of Krāslava district this indicator stood at 10%.

Table 6

Revenue structure of basic budgets of cities and towns in Latgale region (2001, 2006, %)

	Daugavpils		Rēzekne		Ludza		Preiļi		Krāslava		Balvi	
	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006
Tax revenues	52	53	59	57	53	44	34	48	39	41	42	42
Non-tax revenues	8	10	8	7	5	6	26	9	6	6	6	16
Received payments	40	37	33	36	42	50	40	43	55	53	52	42
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Calculations were made on the basis of Daugavpils City budget documents (1994–2006); „Pašvaldību budžeta gada pārskati” (2001, 2006)

Comparing the structure of budget income in the cities of Latgale region, the author of the article can see, that like in all Latvian municipalities, here also three income groups can be distinguished: taxes, non-tax income and received payments among which the decisive role belongs to earmarked subsidies.

In 2001 tax income of basic budgets in Daugavpils, Rēzekne and Ludza municipalities exceeded 50%, in its turn, in such cities as Preiļi, Krāslava, Balvi the main source of income was subsidies and earmarked subsidies. Such situation is characteristic of all Latvian smaller towns – higher share of earmarked subsidies than in bigger towns. Bigger cities receive more tax and non-tax income, which is due to bigger economic activity in these cities. In the field of non-tax income in 2001 the leading position belonged to Preiļi local government. In 2006 the share of tax income increased in the budgets of Daugavpils, Preiļi and Krāslava local governments, while in Rēzekne and Ludza municipalities it decreased and in Balvi it stood at the same level. However, still in smaller municipalities we can observe the situation when the received payments exceed the share of tax income. In Preiļi municipality the share of tax income has increased, as well as received payments, because non-tax income is rapidly decreasing. In Balvi the situation has improved due to the rapid rise of non-tax income.

After assessing peculiarities of income formation in basic budgets of municipalities, the author of the article can see that here the same regularity is observed like in other Latvian local governments: in economically active municipalities, tax and non-tax income dominates, while less developed local governments are more dependant on budget subsidies and earmarked subsidies of other levels.

The main expenditure flow in all local governments goes to social and cultural activity, mostly to education. The biggest share of this expenditure in 2001 was observed in local governments of Daugavpils and Rēzekne (exceeding 80%), while in 2006 – in Ludza and Rēzekne. The highest share of education funds in 2006 was in Ludza local government (70.5%). In its turn, in Daugavpils and Rēzekne a big volume of funds was allocated to social security – 9%-12% of total expenditure, which is not characteristic to any other local government.

Table 7

Expenditure structure of basic budgets of cities and towns in Latgale region (2001, 2006, %)

	Daugavpils		Rēzekne		Ludza		Preiļi		Krāslava		Balvi	
	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006	2001	2006
Economy	12.2	21.8	5.8	13.1	8.4	10.7	31.1	16.1	21.9	18.0	17.9	23.5
Social and cultural events:	80.5	70.1	83.9	76.9	70.3	80.1	52.2	70.4	58.4	72.2	59.6	65.3
education	58.6	51.4	64.1	54.2	58.1	70.5	44.4	54.5	50.7	55.9	52.3	51.9
social assistance	12.2	8.6	12.8	12.3	4.2	4.2	3.3	4.0	3.8	7.1	3.7	7.7
sports and culture	9.0	6.7	6.9	10.1	7.4	5.4	4.4	11.4	3.8	6.6	3.6	5.7
health care	0.7	3.4	0.08	0.3	0.6	–	0.08	0.5	0.1	2.6	–	–
Administration	4.0	5.5	7.6	7.9	6.5	6.8	7.6	9.9	7.1	7.9	8.4	8.2
Other expenses	3.3	2.6	2.7	2.1	14.8	2.4	9.1	3.6	12.6	1.9	14.1	3.0
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Calculations were made on the basis of Daugavpils City budget documents (1994–2006); „Pašvaldību budžeta gada pārskati” (2001, 2006)

The share of funding cultural activity has increased in all local governments, except for Daugavpils and Ludza. In 2006 in Daugavpils municipality the biggest share of funding was allocated to health care. In 2006 the share allocated to funding economic sector significantly increased (transport, communication, municipal economy, etc.) in all local governments, except for Preiļi and Krāslava. The author of the article should also mention that in Daugavpils the share of funds of the city’s council in total expenditure of the basic budget was lower in comparison to other local governments of the region. Like in other Latvian municipalities, the decrease of the share of funding in one sphere in Latgale region results from the increase in another sphere and vice versa.

Conclusions

The analysis of Daugavpils City budget revenue structure shows that tax and non-tax income and received subsidies and earmarked subsidies from the higher level budgets are the most important sources of revenues. In the years 2002-2006 the share of tax and non-tax income in Daugavpils basic budget has levelled out at the rate of 57%-63% (tax – 48%-54%, non-tax – 8%-9%). The second most significant source of income is constituted by payments received by the municipality, basically by subsidies and earmarked subsidies (37%-43%).

The structural distribution of Daugavpils municipality expenditure is approximately the same during the whole researched period, the leading position being held by expenditure allocated to funding of social and cultural events (with domination of education) – 70%-80%, then economic sector (9%-18%), executive power (2%-4%) and other expenditure items follow.

After assessing peculiarities of income formation in basic budgets of municipalities in Latgale region, the author of the article can see that here the same regularity is observed like in other Latvian local governments: in economically active municipalities, tax and non-tax income dominates, while less developed local governments are more dependant on budget subsidies and earmarked subsidies of other levels.

As it can be seen, for each local government in Latgale region the priorities in expenditure field can vary, though the law of funds’ distribution is followed in all municipalities with the biggest part of expenditure going to social and cultural activity, mostly to education, followed by economic sector, funding of executive power and other expenses.

After assessing the situation in municipalities of Latgale region, the author of the article can conclude that all of them observe the same law, i.e., funds are sufficient only for current expenses, while the capital investments are minimal. Since Latgale region experiences the highest level of unemployment and the lowest salary rate in the country, funding of the municipality budget from the income tax is not too effective, the local governments are more dependant on earmarked subsidies of the higher level budgets, subsidies from the Equalisation Fund, but in the field of capital investments – on investments and chances to take loans.

After Latvia has joined the European Union, it will be possible to use European state standards for forming the budget. Some changes in the income base of local governments can be assumed but municipalities should still estimate their taxes and keep rights to administer and regulate them, which will raise the role of local governments and involve residents into planning and management of the municipality life.

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Kopsavilkums

Budžets un tā veidošana ir problēma, kas patlaban satrauc ikvienu Latvijas iedzīvotāju. Sevišķi aktuāls šobrīd ir jautājums par pašvaldību budžetu, kas atspoguļo pašvaldību ieņēmumus pa to veidiem un šo ieņēmumu izlietošanu. Pašvaldību budžeta ietekmi jūt katrs iedzīvotājs, tādēļ nepieciešams atklāt likumsakarības un problēmas, kas saistītas kā ar ieņēmumu iekasēšanu, tā ar optimālu to sadali starp dažādām dzīves sfērām. Pētījuma mērķis ir Latgales reģiona pašvaldību pamatbudžetu veidošanas un optimālas sadales problēmu izpēte un analīze. No mērķa izriet arī pētījuma uzdevumi – izanalizēt Daugavpils pilsētas pašvaldības pamatbudžetu 1995.-2006.gadā: ieņēmumu formēšanas un līdzekļu sadales īpatnības, kā arī noskaidrot pārējo Latgales reģiona pašvaldību pamatbudžetu veidošanas un sadales likumsakarības un to izmaiņas pēdējos gados. Novērtējot situāciju ieņēmumu jomā, var secināt, ka ekonomiski aktīvajās pašvaldībās dominē nodokļu un nenodokļu ieņēmumi, savukārt ekonomiski mazāk attīstītās pašvaldībās vairāk ir atkarīgas no citu līmeņu budžetu dotācijām un mērķdotācijām. Līdzekļu sadales likumsakarības saglabājas visās Latgales pašvaldībās – galvenā izdevumu plūsma ir sociālajiem un kultūras pasākumiem, galvenokārt izglītībai, tad seko tautsaimniecības sfēras izdevumi, izpildvaras finansējums un pārējie izdevumi.

Atslēgas vārdi: pašvaldību pamatbudžets, ieņēmumi, izdevumi, dotācijas, mērķdotācijas.

Need and Design of Computerized Farm Management Tools: Lessons learned from a Swedish case

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Abstract

In the 1980s the author was responsible for the development and marketing of on-farm computer systems in Sweden. Despite the efforts to use the best available knowledge and technology, the adoption rate was lower than expected. The aim of this study is to explain the slow adoption rate and suggest how computerized management tools should be designed to meet the needs of farmers. Many studies have tried to understand this problem, among others by the author. The research method is to review these studies as well as psychological literature. The main explanation of the slow adoption of on-farm computer systems is that computerized management tools produce analytical information, whereas farmers use to a great extent intuitive thinking and intuition for decision making. According to one study, even the farmers using analytical thinking, in addition to their intuition, prefer “intuitive” information. Analytical methods have to be used in computerized management tools, of course, but the adoption experience suggests that the output information from on-farm computer systems should be further processed to fit intuitive thinking. Conclusions are drawn about how to improve the design of computerized information systems.

Key words: analytical, behaviour, decision making, information system, intuitive

Introduction

Many farm management tools aimed at farmers as well as advisors are not leaving the desk where they are developed. We know what the farmers should do but not so much about what the farmers actually do. In 1977 Swedish University of Agricultural Sciences started the project “Farmers’ need and use of management tools” and in 1978 the project “Development of computer-based tools for education, extension service and research in farm management”. In 1979 the author of this chapter visited the U.S. and Canada in order to gather information for these two projects. The visit resulted in a structuring of information about the need for, and design of, computerized farm management tools (Öhlmér and Nott, 1979). Farmers’ management tasks were presented as a hypothesized outline, and citations of several published studies ranging from case studies to large sample surveys were made to provide evidence about which management tasks the respondent farmers thought were the most troublesome. Four ways of using computer systems to provide farm management help were described and compared:

- 1) farmer owned programmable hand calculators;
- 2) farmer owned microcomputers;
- 3) organization provided interactive farm computing;
- 4) mail-in system with a maxicomputer.

Each way was described in terms of (a) the hardware for communication, storing data and doing computations, (b) the software (both the type of algorithm and computer language), (c) the delivery system that links the model together from hardware through end use, and (d) the use actually made of the computer output by the farmer (i.e., the using system). The final part of the study was a case study of computerized farm management tools available to Michigan farmers at that time and how they compared to the outline of management tasks.

An on-farm computer system for Swedish conditions was suggested (Öhlmér, 1981), and the Swedish farmer union and cooperative organizations let their computer centre develop on-farm computer systems for accounting, production planning, and performance control. The production packages included items for milk production, piglet production, fattening pig production, egg production, and crop production. Initially in 1981 microcomputers and CPM operative system, and later PC and DOS were the hardware. The farmers’ accounting service organization was engaged as field organization. A course material was developed

(Pavasson and Öhlmér, 1983) and workshops were organized all over Sweden. The on-farm computer system was aimed at supporting farmers' repetitive tasks in financial, production, and marketing management with daily or weekly use of the system. From 1000 to 2000 farmers used the system, which was lower than expected. One lesson learned was that farmers with higher education used the systems and found them very valuable, but other farmers did not like the systems at all. Some complaints regarded time-consuming data entry and high price.

Nowadays, "computer literacy" has improved, which has reduced the *education constraint* somewhat, but it has not affected the ability to understand the information content. The *data entry problem* has successively been reduced through automated data collecting (Nilsson, 1987). The initially high *hardware and software price* has been reduced considerably. However, the problem of slow adoption persists, and it is the same in other countries as discussed at international conferences. Farmers with high education use IT but other farmers lag behind (Batte, Jones and Schnitkey 1990, Brink and Josephson 1986, Putler and Zilberman 1988, Öhlmér 1989). The aim of this paper is to explain how human information processing may influence the adoption rate, and to explore how computerized management tools could be designed to meet the needs of farmers. We will look in more detail at how farmers actually process and use information, and how computerized management tools might fit in.

Management tools produce analytical information and farmers use intuition

Hammond (1996, p. 60) states, "the ordinary meaning of intuition signifies the opposite – a cognitive process that somehow produces an answer, solution or idea without the conscious, logically defensible step-by-step process". In contrast to analysis, intuition cannot be defended or justified by a "step-by-step" process. Non-intuitive processes are deliberate and can be specified after the fact, and made transparent. Intuition cannot. Hogarth (2001, p. 14) proposes, "the essence of intuition or intuitive responses is that they are reached with little apparent effort, and typically without conscious awareness. They involve little or no conscious deliberation." The definition might seem to cover all cognitive processes of which we are not aware. This is not meant to be the case. We will return later to a more precise definition.

Öhlmér et al. (1997) and Öhlmér (1998) studied farmers' detection of problems and searching ideas of resolutions, respectively, in relation to the decision by the Swedish Parliament in 1990 to apply for the EC membership. This decision meant that Swedish farmers would face price decreases, higher price variations, higher price uncertainty, and marketing difficulties for their traditional products. In 1990, experts expected prices to decrease 20-30%, and a governmental programme to support farmers' adaptation to the new conditions was decided. Adapting to this change was a unique problem, not faced before, and it affected the entire farm situation. Data collected with a retrospective questionnaire answered by 193 farmers (equal to 62% approved responses) were analyzed with path analysis and the Maximum Likelihood estimator using structural equation modelling. The questions asked included time spent on external information scanning, information sources, way of processing information, perceived changes in prices, support levels and farm income, perceived magnitude of the problem, resolution options identified as well as characteristics of the farmer, the farm and the environment (external to the farm) influencing the farmer behaviour. They found that the analytical problem detection process was different from the intuitive process. In the analytical process, farmers had a logic, stepwise procedure, in which they: (1) paid attention to the changes in relevant conditions, (2) estimated the consequences of the perceived changes, and (3) evaluated whether the consequences would be a problem. In the intuitive process, farmers did not use these steps, but paid attention to information about the magnitude of the problem directly from the external information source. Information in mass media, advisory activities, management service and management tools were quantitative, and designed for a logic stepwise procedure of problem detection. About 25% of the respondents used the analytical process. Farmers using only the intuitive process wanted information that focused on the evaluation of the problem, and described the changes in terms of directions from the current conditions. In the analytical process, farmers mainly used mass media and group activities as information sources, and in the intuitive process mainly group activities and individual advisory service. Mass media had considerable information about the changes at an early stage. (The contribution of ICT to each group's use of each source of external information was not studied.)

The environment external to the farm was important for the intuitive problem detection process. The environment was measured as the distance to the closest town. The consultants and the advisory service have their offices in towns. Farmers' suppliers and organizations also have their offices in towns. Workshops, seminars, demonstrations and similar activities are more often arranged in the towns than in areas farther from towns. Thus it was easier to get individual advice in the towns or close to towns and it was easier to establish a rich personal network closer to the towns. The analytical process seemed to be more independent of the distance. There were no significant differences in perceived magnitude of the problem or time of problem detection between the two types of processes.

Regarding search of solution options, farmers using more processed information in the form of, e.g., advisory service, found options having greater estimated consequences on incomes and investments. However, more information did not seem to improve the creativity in the option generation. The level of creativity depended on problem magnitude, ability, degree of quantification, and motivation. These factors were related to the ability to perceive and attend. Thus, these factors were more important for option generation than the amount of information.

Farmers' ability greatly influenced the problem detection as well as option search in both the analytical and intuitive processes. Avoidance also greatly influenced both the analytical and intuitive problem detection. A farmer, who had another problem such as a divorce or an economic problem, did not like to read about, listen to or discuss more problems. This could be an effect of lack of time but more probably an effect of not being able to stand more negative information, which could be compared to the concept of "defensive avoidance" of Janis and Mann (1977).

Lunneryd (2003) studied farmers' information search in strategic decision making, especially in the analysis and choice phase. Converting from conventional to organic milk production was used as a case to learn more about farmers' decision making and search of information. In 2000 a questionnaire was sent to 868 organic and conventional milk producing farmers with 56% response rate. The questions regarded farmers' behaviour in collecting of information, information processing, estimating consequences, evaluating and choosing as well as characterising the farmer, the farm and the environment (external to the farm) that influence the farmer behaviour. A dropout analysis showed that respondents and nonrespondents did not differ significantly. Data were analyzed with the path analysis and the Maximum Likelihood estimator using structural equation modelling. The results showed that the information about converting to organic farming was not adapted to the farmers' special needs. The information was not always adequate to make the decision. Some of it could not be considered as information because it did not properly relate to the farmer's knowledge. Most farmers used only an intuitive process in the decision making, but the information was developed for the analytical process.

Farmers converted their milk production to organic production by either ideological or profitability reasons, or both. Profitability reasons had become more common the last years, and in 1997 they were more important than ideological reasons among converters. Farmers needed information about the current and future profitability in organic production, apart from its effect on the environment. Farmers using the analytical process were interested in direct economic factors such as future demand, rules and support levels. Farmers using only the intuitive process were more interested in production factors that indirectly affect profitability such as production technology and delivery rules. Professional journals, advisors (individual service as well as courses), and neighbours were important sources. Mass media did not contain so much information about organic production, and consequently its ranking was low. (However, studies of other problems discussed in mass media show that even mass media can be an important source.) Based on Lunneryd's study, we can conclude that the analytical process needed detailed information and figures about the various sub-processes, income and costs, and that the intuitive process needed more qualitative information related to their current production or a model farm, such as change in production levels, input levels and profitability if they would convert.

Öhlmér and Lönnstedt (2004) investigated Swedish milk farmers' use of accounting information in an experiment where they sent a description of a case milk farm including accounting reports to 194 milk farmers, and asked the respondents to identify eventual problems and options for resolution. Half of the respondents got the regular year end accounting reports, and the other half also verbal explanations formulated by experienced accounting consultants in the same way as such consultants usually explain

accounting data to their farmer clients. These verbal explanations were called “intuitive” information. The response rate was 42%. A dropout analysis showed that respondents and non-respondents did not differ significantly. Data were analysed with the path analysis and the Maximum Likelihood estimator using structural equation modelling. One third of the farmers used only the “intuitive” information when detecting the problems and two thirds also the analysis. Farmers using only intuition appreciated the “intuitive” information more than the regular accounting reports, as expected. However, farmers using analytical methods also appreciated the “intuitive” information the most. Therefore, all respondents used the “intuitive” information and the intuitive process, and two thirds also the regular accounting report together with the analytical process. The latter group used all available information, which is logical. This information can be very useful for the future management package design – such a programme should produce improved human “*intuitive*” pointers in addition to the analysis.

The described studies by Öhlmér et al. (1997) and Öhlmér (1998) regarded adaptation to changed institutional conditions, and the described study by Lunneryd (2003) regarded the decision about whether to convert from conventional to organic milk production. These problems are unique, meaning that the farmers have not encountered the same problem previously. Unique decisions often concern major considerations with substantial economic consequences. They are one-time decisions, which do not return. The problem situation is often new for the decision maker, which makes it difficult to find action alternatives, learn and evaluate the consequences. The long planning horizon also makes information more uncertain. The whole situation of the manager is affected, which makes it difficult to weigh the consequences and value dimensions together to one measure. The level of probable deviation from the expected value is often very high, and so is the outcome level. Since the decision is only made once, the outcome of the single decision becomes very important. The manager must be sure that the business can manage a possibly negative deviation from the expected value. However, farmers have probably solved unique problems previously and have acquired some experiences of a procedure to handle such problems. (Designing a computer package to assist farmers in this procedure is an issue not yet resolved.)

The study by Öhlmér and Lönnstedt (2004) about the problem detection regarded both unique problems and problems that the farmer had met before, i.e., repetitive problems, such as problems regarding feeding and animal health. Repetitive decisions are decisions that are made several times, and consequently, have been faced before by the decision maker, probably concerning a smaller matter. For repetitive decisions the problem situation, action alternatives and consequences are relatively well known, since the decisions are made recurrently. Only a few of the goals are affected, and the consequences could usually be weighted to one measure, such as profit. The level of probable deviation from the expected value is mostly acceptable. Since the same decision is made recurrently during a longer period of time, it is more interesting to get as good a result as possible for a series of decisions in a longer period, than in a single decision. Thus, for repetitive decisions, such as least cost feed rationing, the normative micro economic theory is applicable.

Farmers’ need for management tools regarding repetitive problems are expected to be large because these problems are rather frequent. The on-farm computer systems introduced in Sweden in 1981, as discussed previously, as well as similar systems in other countries, contained management tools for repetitive problems, and the analytical methods used were applicable to the problems. However, the adoption rate was rather low. One important explanation seems to be that *farmers use intuition to a great extent, whereas computers produce quantitative information aimed at analytical thinking*. This also explains why the farmers who had adopted computerized management tools and found those tools very useful were the most educated farmers and those trained in analytical methods (and thinking). However, we still do not know how to design computerized farm management tools to be useful for intuitive thinking. We need to go deeper into the farmers’ information processing.

Farmers’ information processing

Öhlmér et al. (1998) have suggested a conceptual model of the analytical problem solving or decision making process (Table 1). They distinguish between four functions:

- problem detection, resulting in detection of a problem or not;
- solution option searching, resulting in choice of options for further development;
- analysis and choice, resulting in choice of one or more options;

- implementation, resulting in output consequences and responsibility bearing.
- Each function includes four subprocesses:
- searching for information and paying attention to relevant information;
 - planning and forecasting consequences of the new information;
 - evaluating consequences and choosing alternative(s);
 - bearing responsibility of the choice.

Farmers are not expected to follow a common set of steps in a simple, sequential process. Each function and sub-process give the farmer a deeper understanding that normally causes the farmer to revise the outcome of earlier functions and sub-processes.

Searching for and paying attention to information as a sub-process is included in all the functions. The information is combined with experiences and other knowledge stored in the long-term memory and used for estimating consequences and evaluating them. In problem detection, consequences of differences between expected and observed information are forecasted. In the other functions, consequences refer to broad consequences of option ideas, more detailed consequences of an option,

Table 1

Conceptual model of the decision making process (Öhlmér et al., 1998)

Function	Subprocess			
	Searching & paying attention	Planning & forecasting	Evaluating & choosing	Bearing responsibility
Problem detection	Information scanning; paying attention	Forecasting consequences	Consequence evaluation; problem?	Checking the choice
Solution option search	Information search; finding options	Forecasting consequences	Consequence evaluation; choice of option to study	Checking the choice
Analysis & choice of option	Information search	Planning & forecasting consequences	Consequence evaluation; choice of option	Checking the choice
Implementation or action	Information search; Clues to outcomes	Forecasting outcomes and consequences	Consequence evaluation; choice of corrective action(s)	Bearing responsibility for final outcome; feed forward information

and consequences of differences in planned and forecasted outcomes, respectively. The managers need different information in the different functions of the decision making process.

The model concepts have been tested to be significant in the previous cited studies made by Öhlmér et al. (1997), Öhlmér (1998) and Lunneryd (2003). The model concepts and relationships were significant for farmers using analytical methods. Farmers using only intuition had significant relationships directly between the perceived information and conclusions about (i) detected problems, (ii) identified options, and (iii) options chosen to be implemented. This means that the farmers processed the information to conclusions but they were unaware of the how they processed it. Hogarth (2001) presents a model of the human thinking

process that includes tacit and deliberate systems, and Klein et al. (2005) present a model on how the intuitive system might work. These two models are combined in Figure 1.

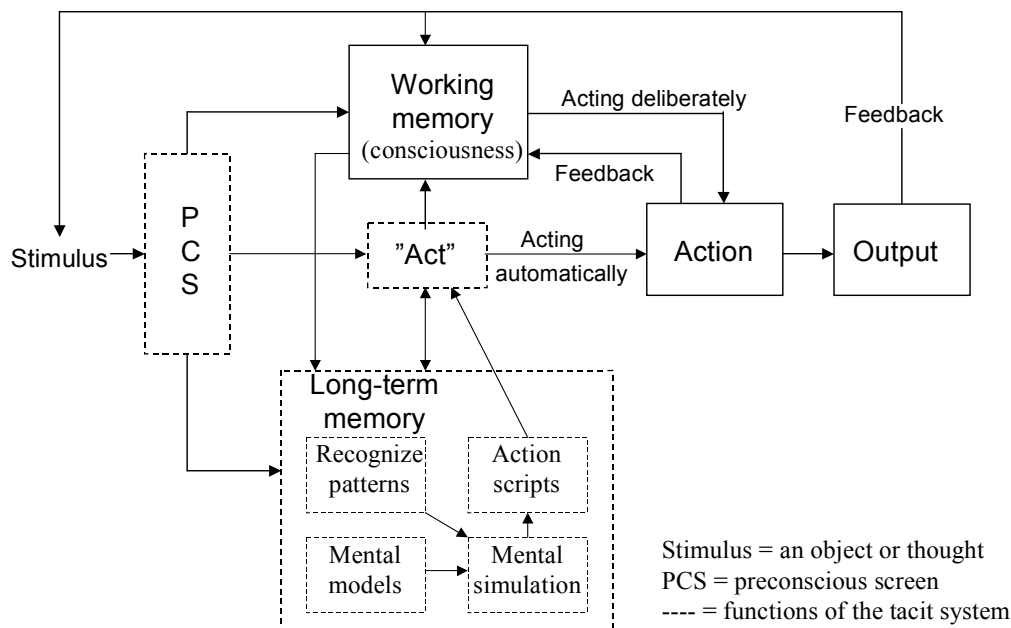


Figure 1. The tacit and deliberate systems of human information processing (after Hogarth, 2001, and Klein et al., 2005)

We assume that the tacit and the deliberate systems control the processes by which we learn and take action. There are actually more than two systems involved, but this twofold division is sufficiently rich to explore the topic of intuition. Hogarth (2001, p. 21) states, “the term *tacit system* is meant to encompass all processes that occur tacitly or automatically, that is, largely without conscious attention.” It therefore includes intuition. It also includes what is learned through experience with the expenditure of little or no conscious attention. “The term *deliberate system* is meant to encompass all processes that require effort, that is, attention and deliberation” (Hogarth, 2001, p. 21). While it includes analysis or logic, it does not exclude processes that do not conform to any known rules of analysis or logic. All processes included in the deliberate system involve the explicit manipulation of cognition. Learning taking place within the deliberate system demands explicit effort and attention.

According to Hogarth, a mental process is started by a *stimulus*. The stimulus can be external to the person, such as something that is seen, heard or felt. It can also be internal, for instance a thought may trigger other thoughts. The stimulus is initially processed by a *preconscious screen*, which is an automatic mechanism that decides whether the stimulus will or will not enter consciousness. If not, it can be stored without awareness in the long-term memory for possible future use, and an action can eventually be taken automatically. If an action is taken automatically, the person is aware of the action only after it has been taken. Typically, we like to think that our actions are the result of our own goals and wishes. The system described has the implication that such an action may determine the person’s intentions, so an action may actually precede the intentions. The ability to record stimulus without conscious awareness is very valuable because the deliberate system is a limited resource and must be used sparingly, whereas the long-term memory is almost unlimited. However, the system does have costs. One is that the tacit knowledge is a function of the particular environment that a person faces and, if the learning structure is wicked, such learning may not be functional. Another is that much tacit exposure to certain experience is likely to induce confidence, but we do not know explicitly how we acquired this knowledge, so it is difficult to assess

whether our confidence is justified. Conscious attention is a limited resource, and it is allocated to tasks that are judged to be important at given moments in time. The deliberate system is invoked either when the tacit system cannot solve the problem or task at hand, or when the person makes some conscious decision. At any given time, however, both the tacit and deliberate systems operate simultaneously. When working on the same task, the tacit system seeks to identify aspects of the problem to which it can relate, such as patterns, and the deliberate system tries to work through the problem in a step-by-step procedure that needs more effort. If the task is familiar, the tacit system quickly finds an answer, and the deliberate system is then used only to check it or not used at all.

The preconscious screen generates information that may include cues. These cues let the tacit system recognize patterns that activate action scripts, which the system can access by mental simulation using mental models (Klein et al., 2005). The tacit system relies heavily on experience within the relevant subject area. If the problem is repetitive, such as controlling weeds and spraying herbicides, and feedback on the action output is available and accurate, experience will be built up that allows the tacit system to produce accurate “acts”, such as judgements about (i) whether there is a problem, (ii) what options may solve the problem, (iii) which options to choose, and how the options could be implemented, and (iv) what corrections are needed during the implementation. The deliberate system may only need to check whether the “act” in question is accurate. Thus, analytical information may not be needed, which could explain the low adoption rate of management tools for solving repetitive problems.

Moreover, when solving unique problems some moments may return, such as some patterns of problem symptoms, some patterns of environmental cues, some mental models that allow to forecast what will happen etc., which would allow a manager to build up experience provided that accurate feedback is available. For both repetitive and unique problem solving correct feedback is needed to improve intuition. Feedback improves pattern conceptions, relationships between cues and patterns, the mental models and the action scripts.

The Dutch EIPRE wheat disease control software (Blokker 1984) could be an illustration of a consequence of the human information processing. It was found that every year around 3000 farmers were using the software, yet it was expected that over time the number would increase. What happened was that the experienced farmers, once they “learned” the programme’s inherent principles, did not need the analytical information and would drop out after a year or two while “new” farmers joined. The result was that the number of users remained constant.

How can computerized management tools assist?

Referring to the tacit and deliberate systems illustrated in Figure 1, computerized management tools may:

- produce stimulus for preconscious screening;
- assist the deliberate analysis including checking and verifying intuition;
- provide feedback.

Computerized management tools produce information that could be stimulus for the preconscious screening. The information could be of importance for any of the four functions listed in Table 1 and relevant for the subprocess searching and paying attention, but in case of the tacit system the information will go directly to the long-term memory without any attention. It forms a basis for the subprocess planning and forecasting deliberately or intuitively.

Computerized management tools may assist the deliberate analysis in the subprocess planning and forecasting. Thus the tool may (1a) diagnose problems and produce information about symptoms or indicators, (1b) forecast consequences of problems, (2) suggest resolution options and forecast consequences, (3) plan options and forecast consequences, (4) plan implementation including steps, milestones, feedback procedures and eventual corrective actions.

As a part of item 2 in the list above, computerized tools may also assist the deliberate analysis in the subprocess of evaluating and choosing given that accurate values and an accurate object function can be included in the tool. If so, the tool can produce information suggesting conclusions about the function in

respect (in the concepts of Table 1). As another part of Item 2, computerized tools may assist the deliberate system by checking intuition in the same way as the two previous paragraphs suggest.

Computerized tools may provide feedback (Item 3), which is already an important task of many tools. However, currently feedback consists of general information such as a financial report or a production efficiency report. The feedback should regard the specific action output to be efficient, and it should be provided as soon as possible after the action was taken.

The listed three items: (1) Producing stimulus for preconscious screening, (2) Assisting the deliberate analysis including checking and verifying intuition, and (3) Providing feedback, refer to different parts of the tacit and deliberate systems according to Figure 1, but they are not comparable because computerized tools produce information, so Items 2 and 3 had to be information fed into the tacit and deliberate systems as stimulus. The subprocess of each function in Table 1 could be one or several loops in the tacit or deliberate system. However, the information should be in a form that works as cues to recognizable patterns, i.e., that connects to the farmer's experiences and mental models. The information should relate to the farmer's long-term memory, i.e., to the current situation, previous experiences or learned concepts. The information should not be general but be about, e.g., what will happen to the farm and the farmer. Information about problems and options expressed as deviations from the current situation is easier to conceive than the general information. If such information could not be provided, the information could be related to farmer experiences by providing information about good examples, such as case descriptions about farms with similar problems and how these problems were solved, or about farmers that have implemented relevant options, i.e., early adopters. Ideally, the farmer should visit such model farms.

Conclusions

One main explanation for the slow adoption is that computerized management tools produce analytical information, whereas farmers use intuitive thinking to a great extent. According to one study, even the farmers using analytical thinking, in addition to intuitive, prefer "intuitive" information.

Computerized management tools should be designed to produce "intuitive" or tacit information in addition to the current analytical information. Thus, they should not just produce indicators of a problem but also what will happen to the farmer's current production, cash flow and similar, if the eventual problem is not addressed. They should not only produce an optimal plan but also show how the current situation will change and the consequences for the current goal fulfilment of these changes. The information has to relate to farmer experiences. Analytical methods have to be used in computerized management tools, of course, and it could be the same methods as previously. However, the results suggest that the output information should be further processed to fit intuitive thinking.

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The Case of Agriwise – a Farm Decision Support System in Sweden

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Abstract

In the current information age, data are entered into one system, printed out, included into a new information material, and manually entered into another system. The aim of the paper is to describe the development of a system for synthesising and distributing information based on many sources. The specific task is to develop a decision support system, named Agriwise; a database and connected decision support applications available on Internet. Such an organisation has been developed at SLU, Sweden, including a database and two tools, enterprise budgets and a business plan.

The information system is developed in close cooperation with the users. Users can influence the development in a consultative group. Opinions and requests from users are also collected in questionnaires and by e-mail. There is also a function for asking questions on the home page. Well known computer software such as MS Excel is used in the system.

A database and connected decision support applications have been developed and are available at Internet, where different actors' sources of information are structured in such a way that data can be collected in a semi-automated way, processed if needed and the output reports can be individually designed. The use of the product leads to a standardization of concepts and calculation methods. The users have access to a large amount of structured information which is quality certified and SLU has through Agriwise a tool for communicating research results to the agricultural sector and for teaching and research.

Key words: advisory, decision support system, IT, research information

Introduction

Background - Need of information in decision making

Farming is the most important income generating activity in many rural areas. In developing the farm enterprise, the farmer needs information on the existing options and consequences of choosing a specific option. Especially in a rapidly changing environment, the access to information is important in adapting the enterprise to new conditions. This can be the case in societies in a transition stage like joining the EU, or during the present volatile changes in the world market prices for agricultural commodities.

Öhlmér et al., (2001) have distinguished two categories of decision making processes, one analytical and one intuitive. The categories are not separate groups, but endpoints in an interval.

In the analytical process, the issue is decomposed into known and manageable parts. Each part is analysed separately, and the conclusions of each part are summarized into a solution for the entire issue. Information like accounting data is most often transformed to key indicators, such as solidity, profitability, liquidity etc., before comparison with expectations. In the intuitive process, the entirety is judged. The decision maker recognizes similar situations from own or others' experiences and the differences are compared to his current situation. On this basis and with some additional information about the entirety, he judges how to solve the current issue (Öhlmér et al., 2001).

The decision making process has been studied in more detail in a Swedish research program (Öhlmér, Brehmer and Olson, 1997; Öhlmér, Olson, and Brehmer, 1998; Öhlmér, 1998). They identified four separate functions (but not steps) of decision making (Table 1):

- Problem detection, resulting in detection of a problem or not;
- Problem definition, resulting in choice of options for further development;
- Analysis and choice, resulting in choice of one or more options;
- Implementation, resulting in output consequences and responsibility bearing.

Each function consists of four sub-processes:

- searching information and paying attention to relevant information;
- planning and forecasting consequences of the new information;
- evaluating consequences and choosing alternative;
- bearing responsibility of the choice.

Table 1
Conceptual model of the decision making process (Öhlmér et al., 1998)

Function	Subprocess			
	Searching & paying attention	Planning & forecasting	Evaluating & choosing	Bearing responsibility
Problem detection	Information scanning; paying attention	Forecasting consequences	Consequence evaluation; problem?	Checking the choice
Problem definition	Information search; finding options	Forecasting consequences	Consequence evaluation; choice of option to study	Checking the choice
Analysis & choice	Information search	Planning & forecasting consequences	Consequence evaluation; choice of option	Checking the choice
Implementation or action	Information search; Clues to outcomes	Forecasting outcomes and consequences	Consequence evaluation; choice of corrective action(s)	Bearing responsibility for final outcome; feed forward information

At this level of detail we can see that search for and paying attention to information is included as a sub-process in all the functions. The information is used for estimating consequences and evaluating them. In problem detection, consequences of differences between the expected and observed information are forecasted. In the other functions, consequences refer to broad consequences of option ideas, more detailed consequences of an option, and consequences of differences in planned and forecasted outcomes, respectively. The managers needed different information in different functions of the decision making process.

Decision making situations or information search by an advisor or a farmer can be exemplified by the list in Table 2.

Table 2
Examples of decision making situations or information search by an advisor or a farmer:

1. Forecast the development of prices, support levels, and technology
2. Find ideas about new market or production options
3. Start a new production enterprise
4. Increase or decrease production
5. Investment (such as in acreage, buildings, machinery, other new technology etc.)
6. Performance control (e.g., bench marks) of both quality, quantity and profitability
7. Budget forecast
8. Valuation of entire farms, acreage, buildings or enterprises
9. Financing
10. Input-input and input-output choices, i.e., intensity, resource use, and input combination. Examples are fertilization, crop protection, machinery system, cropping system and the best use of excess capacity

Öhlmér, 2002; Öhlmér and Nott, 1979

Aim

The aim of the paper is to describe the development of a system for synthesizing and distributing information based on many sources. The task is in more concrete terms to develop a database and connected decision support applications available on Internet, where different actors' information are collected and output reports can be individually designed. This decision support system is named Agriwise.

Method

Close interactions with the users were established early in the development process in order to focus on the users, to facilitate to meet the users' needs, and to get the users to feel responsible for the end product and be committed and motivated to use it. A consultative group for consultation on the content and presentation on the Internet was thus formed at the project start. The consultative group consists of representatives of the users. A prototype was developed in the first project year and the system has been in use since 1998.

Excel is a very well known spreadsheet program, which has become a standard. A user should easily be able to utilize the information from the database and calculation model from the enterprise budgets in Excel sheets. Data, explanatory text and calculation models are presented in HTML and Excel.

Data is gathered from organizations that have contributed to the data book previously. These were departments within the Swedish University of Agricultural Sciences (SLU), agricultural cooperatives (Svenska Lantmännen, Swedish Meats, SHS etc.), authorities (SJV), firms (Svenska Foder, Danisco, Svalöv-Weibull, etc.) and ARBIO (employers organisation).

Result - Agriwise

Business idea and target group

"We will communicate, through Internet, knowledge and experiences from research at SLU and its partners, and add other relevant information and application software, so our users perceive that they get a complete, current and correct basis for analysis and decision making in the short and long run within agriculture and supplementary businesses."

The target group consists of firms and other organizations that have farmers, horticultural firms, foresters, sport horse owners and similar as customer, supplier or other business partner. The target group includes also organizations that use agricultural information in teaching, research development and investigations.

Agriwise's current supply of information

Agriwise has the following systems, application software and services:

Database for farm planning (farm management handbook), corresponds to the former Databoken, (Databok för driftsplanering, 1996) which is a collection of agricultural data (around 600 tables) useful for farm planning and decision making.

Regional enterprise budgets, which are models for estimating incomes, costs, and gross margins of farm enterprises in different geographical regions (a total of around 600 budgets) corresponds to the former Områdeskalkyler, (Områdeskalkyler för jordbruk, 1996). Data from the database are used, but data describing the specific situation should be added if available.

Farm Business Plan, which is a model that combines relevant enterprise budgets, adds common costs and develops a farm business plan including profit and loss statement, balance sheet, feed balance and balance of intermediate products and similar.

Courses and investigations; Courses about farm planning can be given to the target group. The target group can engage Agriwise for investigations or development tasks within the subject.

Referring to the ten decision making or information search situations in Table 2, the database covers situation 2-9. The regional enterprise budgets are more specific and cover situation 2-8. The farm business plan is still more specific and covers situation 3-5 and 7-9. Agriwise doesn't cover situation 1, forecasting prices, support levels, and new technology where you need to scan the development in the surrounding world, nor situation 10, choice of intensity, resource use and input combination (e.g. feed planning) where you need more detailed biological and technical information.

Users' experiences

Users' experiences of Agriwise database and enterprise budgets have been investigated with a questionnaire sent out by Agriwise, and by interviews made by independent evaluators (Öhlmér et al., 2002). The users said it was technical and logical simple to use both the database and the enterprise budgets. It was a little easier logically to

use the enterprise budgets. See table 3. They regarded both the database and the enterprise budgets to be very useful, and that the enterprise budgets were the most useful.

Table 3. User experiences of Agriwise

	Database	Enterprise budgets
Logical difficulty in using	Easy	Easier
Technical difficulty in using	Easy	Easy
Type of content	Data	Data
Usefulness	Useful	Calculations More useful
Competing information sources	Journals Personal network	Journals Personal network

Users said that using Agriwise was worth the cost for it. Some said that there was competing information and other that there was not. Competing information could be provided through journals and personal contacts. Answering a question about hindrances for using Agriwise, the users listed: data too old, irrelevant data, and technical difficulties.

The user experiences are collected from only seven users, so the conclusions can only be in the form of hypotheses for further testing.

Increasing managers' use of decision support systems (DSS) means changing their behaviour. Increasing the driving forces or reducing the restraining forces can bring about such change. The latter approach is often more fruitful and should have higher priority, because to increase driving forces without attention to restraining forces may increase pressure and tension between the users and the DSS suppliers (compare Kast and Rosenzweig, 1985, p. 637)

Data too old

The users indicated that the data and information should not be too old. However, each updating of data costs a lot, so the frequency of updating should be exactly what is needed, neither less nor more. Data used for analysis of problems within the year may need to be updated several times per year, but in long run decision making it may be enough with data describing the development over years, so such data could be updated just once a year.

Relevant data and information?

In a perfect world, researchers could foresee future information need and have relevant information available when needed. Through analysing statistics over visited tables in the Database and enterprise budgets, it is now possible to get knowledge about what kind of information the users are demanding. This is used to decide which part of the Database to update more frequently and what to expand. We also need a system to catch the users' signals about information that is needed but not found. Such a system means a channel from the users to the university that could affect the research.

The consultative group is one forum to collect information, at least from the major users, about demand for specific information. At present, information concerning business opportunities with horses, energy use as well possibilities to supply energy from farms. This includes for example bio energy and wind power.

Another aspect is that the data and information should be valid for the specific farm to be relevant, which means that they should be as local as possible, such as possible to adapt to local conditions in the form of soil type, climate, etc.

Which form of data and information?

Interviews of Agriwise users (Öhlmér, Flodin and Karlsson, 2002, chapter 5 and appendix 2) show that the target group wants information specially developed for each decision making or information search situation and that this information should cover the entire information need in this situation. The users want a synthesis based on information from different disciplines, where the synthesis is developed for just this situation. If possible, a button for a specific situation, but they want also a search engine that is easy to use, and an option to produce information tables of their own. One example is deciding whether convert to organic milk production, where you need information about organic production of roughage, pasture, milk and heifers as well as the market and support information and budgets for the enterprise and the entire farm. The budgets are syntheses of the other listed information. The analytic farmers can do with information about the estimated incomes and costs in the

new situation, but when advising intuitive farmers the advisor has to analyze also the current situation (i.e., the farmer's reference point) and discuss how it will change.

Every kind of situation 1-10 in Table 2 can be further divided in many specific use situations that together form all the farmers' decision making in the short and long run.

The users regard the enterprise budgets as easier to use technically and logically than the database. It is easy to use one of the database tables, but the data is fragmentary meaning that you have to use many data tables to get the same information as from one enterprise budget. It is easier if all information needed in a specific situation is presented in one report.

Which concepts for presenting data and information?

Given the limited processing ability of the human being, it is natural to define a reference (or anchoring) point and think in terms of differences from this reference point (Hogarth, 1987; Orasanu and Conolly, 1993). When analyzing a farm, the current conditions, organization, and achievements are the reference points. The Agriwise users evaluated the change actions in terms of comparing the forecasted consequences to the current achievements. So, such differences should be presented to the users, preferably in terms of fulfilment of relevant goals.

Taking enterprise budgets as an example, they should be calculated for both the current situation and the situation after the change action, which can be done with the existing application. Then these two situations should be compared and the differences presented, which could be done with a new application. A synthesis at this level is especially important if the advisor/consultant using Agriwise should present the information for an intuitive decision maker (Öhlmér, 2001)

The application for farm business planning is presenting the planned farm results in the form of a profit and loss statement, a financial statement and key indicators, which can be compared to corresponding information from the current business.

Users' experiences summarized

The users' experiences could be summarized in the following hypotheses:

The frequency of updating the database should be exactly what is needed, neither less nor more

It is important to include a system to catch user signals on lacking data and information

The data should be as specific as possible, i.e., valid for a specific farm if possible

The most common use situations should be identified and information generators developed for each

Information about change actions should be presented as differences from current operations and achievements.

Technical solution

A prototype of the system was developed in the first half year of the project (1998) to be able to deliver information and services to users and by that get users to interact in the development process. The database prototype was based on static HTML-pages, and the enterprise budgets were generated manually. The farm business plan used the generated enterprise budgets, and they could be adjusted with local data. Data collecting and entering in the database was made manually.

The Database

The database consists of around 600 tables, which is an unusually high number for a database.

Data are stored in a central database despite that it means storing the data in two locations. In a distributed solution, just the data providers store data. Our motives for the central database are that:

Farm production processes use a long time period, which means that the dates of various input and output are related to each other, so the prices and quantities have to be valid for these dates. This is complex to handle in a distributed solution.

When data collected from several sources are put together into an entirety, calculations may be needed, such as feed planning or optimizing machinery systems, and the user may ask questions about the entirety.

The user wants to use the same data in repeated calculations, so announced updates are needed, with specific version numbers of each edition, rather than the most recent figure.

The user wants an impartial quality control of data, so the data had to be checked and approved.

Data collecting

Agriwise staff collects data by telephone, from Internet or from literature references and enters them in the tables. The intention was to use XML to transfer data from the data providers to Agriwise. XML can be described as a database expressed in a text file, which simplifies communication between databases. Unfortunately, no data provider delivers data in the XML format. Many data providers store and present data

in Excel sheets. Examples are the National Statistics (SCB) crop yield data and the Statistical Yearbook of forestry. It is possible to transfer Excel sheet data to a database.

Output

The output has the following format:

HTML

Excel sheets

The database information is generated in HTML. Data from the database is used to generate Excel sheets with enterprise budgets. Excel sheets with the farm business plan are developed with a Business Plan Generator. It is an application in Visual Basic for Applications that uses enterprise budgets as input.

Discussion

Organization

Agriwise is a permanent project within the Department of Economics, SLU. Since SLU is a non-profit, governmental organisation, this organization assures that the published information is unbiased and also that organisations that normally competes can cooperate in this project.

Agriwise users have got a common view and knowledge about the need and possibilities of developing a system for synthesizing and communication information based on many sources, and the users represent all important user categories. The discussion with other relevant organizations continues to develop this common view and knowledge further.

The Agriwise has been improved continuously since initiation according to user responses. In that way, we have been able to develop the services to cover the user needs and also to make the system user friendly.

A weak point in the Agriwise organization is that some external data providers hesitate to give information about prices on farm products and inputs. Their competitors could take advantage of such information. So far, we have got the information but with sometimes considerable delay. An alternative is to collect price information from a sample of farmers.

The market

The Agriwise services have two different types of users. One type of user uses the Agriwise information in his business. We call him user or end user in this paper. The other type of user is the data provider. He uses Agriwise to communicate his data and information. The university's "third assignment" is to communicate new knowledge and information (i.e., own and others' research results) to practical use. Agriwise is a tool for this assignment that distributes new knowledge and information all the way into the advisors' and farmers' computers for practical use. Also market actors and institutional actors want to communicate their information about products or regulations, respectively.

The number of potential users of the first type is large. There are thousands of advisors, consultants, teachers, credit evaluators, property evaluators, damage evaluators, real estate agents, and institutional officers etc, who need this type of information in their business. We have chosen organizations, which have the potential users as employees, members, customers or suppliers, as the target group for subscription of the Agriwise services. One reason is that the costs of administration will be lower because the number of such organizations is much lower than the number of users. Another reason is that the user will feel more free to use the service to a larger extent.

The users' alternative information sources are own experiences, advisors, colleagues, journals, other literature and customers. An alternative for a big organization is to have a system of its own corresponding to Agriwise, but it is much more expensive to finance the system alone, the concepts and calculation methods may not be standardized, and the information might not be unbiased. The Agriwise system has been running for almost ten years now, and it is economic sustainable since user fees are covering cost for updating information and maintenance of the system.

The product

A decision support system has been developed including the structural components:

Data and information

Calculation methods

System for delivering the services

System for using the services

The data are (1) technical coefficients (including quantities) describing production functions, e.g. resource use and output at a given point of the function, (2) prices of products and production means, and (3) laws and regulations. These types of data and information have previously been presented in a printed version. The contribution of this project is more frequent updating, procedures of quality control, and that new areas have been added such as organic production, horticultural crops and special enterprises outside conventional agriculture. The information produced by the enterprise budgets have been available before in printed versions, but the business plan based on the enterprise budgets is a new contribution.

The calculation methods for enterprise budgeting and business planning are known previously and described well in the literature. The contribution of this project is to combine them to an entirety and adapt them to the system for using the services.

The system for delivering the services to the users consists of (1) collecting data, (2) delivering data and information, and (3) feedback from the users. The technical coefficients are mainly provided by SLU and to some extent Statistics Sweden. In some cases, optimizations or other calculations are needed to produce the coefficients, such feed plan optimization or simulating machinery systems. The market actors provide the main part of the prices. Institutions, such as Statens Jordbruksverk (Swedish Board of Agriculture), provide information about laws and regulations. Data and information are delivered to users via Internet in HTML- or Excel-format. The users give feedback through the Agriwise homepage, email, telephone, the consultative group or yearly questionnaires. One contribution of the project is the development of this delivery system, which is unique. The system combines data and information from various disciplines within SLU, the market and the institutions to an entity delivered into the users' computers, and gives feedback about the usefulness and lacking information.

The system for using the services is based on HTML, Word and Excel, and knowledge in economic calculation. Information is data processed to a form that has a meaning for the user and is of value for ongoing or planned actions or decisions (Eisgruber, 1967; Davis, 1963; Bonnen, 1977; Everest, 1985 among others). The user should be able to understand the concepts and the concepts had to fit the user's thinking processes. The user retrieves data and information from the Agriwise services, adapts them to the actual planning situation and processes them to become a basis for the decision or the analysis. This basis is produced in collaboration between the user and Agriwise, which put some knowledge demands on the user. One important contribution of this project is the ability to deliver data and information directly into the user's computer without manual data entry, which reduces the need of work and risk of errors. Another contribution is the standardization of concepts and calculation methods.

The Agriwise services provide information for planning and analysis of unique decisions, which have a strategic and long run character. The services are relevant for those who perform such tasks often enough to need the services, which mainly are advisors and other professionals serving farmers but also big farms. The Agriwise services include courses about the knowledge needed to use the services.

The development process and the technical system

The steps in the development of the technical system have been:

Specification of user demands and technical demands

Development of system components (including successive tests)

Implementing the entire system (including tests by users).

The project started with specifying the demands that the system should meet. Concepts, structure, calculation models and other content needed regarding the database and enterprise budgets were well known both from the previous printed version and the literature. A business plan was not included previously, but various calculation models were well known from literature and teaching (Öhlmér, Göransson and Lunneryd, 2000; Karlsson, 1980; Nilsson, Liljegren and Söderberg, 1983; and Lantbruksstyrelsen, 1987). We chose a budgeting approach instead of profit maximization because the users demanded simplicity and transparency. A business planning model based on profit maximization may be added as a complement in the future.

The users had difficulties to read and discuss the specification of demands, so a prototype of the database and the enterprise budgets were developed in order to get user responses. The concepts and the calculation models were included and most of the users' demands were fulfilled, but there were no search engine and no advanced report generator. In the development we followed methods that have the user and his activities as a starting point, such as Task-Centered User Interface Design (Lewis and Rieman, 1993), User-Centered Design (Norman, 1993) and Action-Centered Design (Denning and Dargan, 1996). The consultative group has been very active in specifying user demands and discussing the prototype. Their influence on the content and design of the services has been very great. The organizations represented in the group are committed and feel responsibility for the Agriwise system.

However, the development has not been without difficulties. One example is reorganization of the IT activities of the university resulting in a loss of all IT-competence. Another is that we under-estimated the complexity of the

database development due to special characteristics of this database. Normally, a database has few data categories and many observations of each category. Here, the database has many data categories and few observations of each category. The number of tables to generate is around 600 instead of a couple, which was time consuming. However, the biggest difficulty was the lack of a common information structure. Measurement concepts of the same events or factors differed between different disciplines, and even between different laws and regulations. So defining and structuring data was very time consuming, and a lot of calculations are needed before entering some of the data into the database. A consistent conceptual structure would facilitate collecting data from many sources, but currently a lot of concepts are not consistent. So far we have just paid attention to the problem. We have to use data as they are and make necessary calculations. This may be a generic problem that exists also in other branches.

Current information to farmers is analytically designed, but 2/3 of the farmers use an intuitive process in their unique decision making, where they focus on the entirety instead of analyzing subsystems in detail (Öhlmér, 2001). The advisors have to redesign the information before communicating with intuitive farmers. The consequences of a big investment or a big organizational change have to be related to the farmers anchoring or reference point and expressed as changes from this point. Usually, the anchoring point is the current operation or the operations of a model farm well known to the farmer. So this anchoring point has to be analyzed too, and the changes described. In the business plan, a regular profit and loss statement and financial statement as well as key indicators are estimated, which can be compared to the corresponding reports of the regular accounting systems.

Future development

The idea of the project presented here is to present research results in the form of information for decision making that is tailor made for the user, and that this information is available on Internet so it can be used directly in the user's computers. Agriwise as presented here is a start in the area of strategic decision making.

In the consultative group, the issue of further adapting the enterprise budgets for different planning situations has been raised. The planning period is different if you want to calculate the profit of fattening another batch of slaughter pigs or if you want to expand your production with a new barn. In the first case you want to use present prices or maybe future prices, if they are available, in the second case, an average price over several years are more useful. To handle these extra alternatives, the method of generating budgets might have to be modified.

For the moment, only economic information (prices and quantities) is used in the budgets. However, the same system could be use to include information of environmental interest. Fuel, fertilizers, machinery and other products used in agricultural production could be given an "environmental cost" instead of a price. The "environmental cost" could be energy required or carbondioxid released to the atmosphere during the production of the input.

As a next step, Agriwise will be enlarged successively to other disciplines as well. The university's crop protection unit has a system where they present forecasts several times a week on the Internet. The unit for applied field research has started to develop a system for presentation of research results on Internet. These two systems will become Agriwise - crop protection and Agriwise – crop production, respectively. Agriwise as described in this paper will become Agriwise – economics. All these systems will be coordinated so they can exchange data with each other and have a common user interface. The faculty is responsible for the coordination, and each expert group works otherwise independently within its area. This will facilitate the interdisciplinary work as well as the combining of information from different sources to become a useful information basis for farmers' decision making in both the short and long run.

Conclusions

We have developed a database and connected decision support applications available at Internet, where different actors' sources of information are structured in such a way that data can be collected in a semi-automated way, processed if needed, and the output reports can be individually designed.

Corresponding products may be of interest in branches outside agriculture with a need to calculate, and with many small actors that cannot finance such systems of their own, such as branches where many small firms calculate bids and contracts. It may also be of interest in environmental management such as estimating environmental consequences, life cycle analysis, mineral balances etc.

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SUMMARY

The influence of values on strategic decision making: the case of farmers' choice of organic milk production

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Little is known about the influence of farmers' values on their strategic decision-making. Profit maximization is assumed, but farmers' may have other values that influence their decision-making. The aim is to explore such influence of values using farmers' choice of organic milk production as a case.

A value is defined as the goodness or badness of a condition, situation or thing. Values are neither attitudes nor goals, but these concepts are related. A value deals with what is desirable. An attitude is a readiness to respond in a particular way. A goal is a condition not yet established or attained, which some entity is trying to attain. A hypothetical model of the decision making process was developed based on a literature review and case studies. The hypothetical model was estimated with survey data, and structural equation modelling. The survey was sent out to 868 farmers during the year 2000. The response rate was 56 %. The hypothetical model contains a complex system of directly and indirectly related concepts at a fairly high level of abstraction. These can only be measured indirectly, as latent variables, using several measurement variables such as attitudes (measured in Likert scales). The decision making process can be divided in several subprocesses, and to get the model manageable each subprocess was represented by a structural equation. The system of structural equations was estimated with path analysis and the Maximum Likelihood estimator using the LISREL computer program.

Values seem to be intimately woven into the decision making process. However, to explain decision-making behaviour only by values or value structure is too simple as a solution. That would not give much information about how decisions really are made. Rather the decision making process in that case just would be reduced to a "black box". The decision model we have used in this study does include values; in the sense that values are present and important in all phases of the decision-making process in addition to other influencing factors. Personal and socially oriented characteristics seemed to play a more important role in the problem definition phase, in which the purpose is to find solution alternatives to the detected problem. Here the organic ideology-oriented values are significant in our case. The values may change over time because of changes in the life cycle phases, and then a farmer may regret and change a previous choice. The values structure affects choice of information sources ($t=3.14$), intensity in information search ($t=2.15$) as well as way of processing information ($t=2.47$), forecasting consequences ($t=2.46$) and evaluating consequences ($t=2.78$). The higher the problem was evaluated, the higher was the probability of implementing the choice ($t=2.99$).

Profit maximization is important, but farmers have also other values, which influence their choices. Researchers, advisors and politicians should be aware of farmers' values (and other influencing factors) so they can understand and predict farmer behaviour and provide relevant information, service, support and policy measures.

Key words: behaviour, descriptive, values, decision-making process, farm management, strategic decision making, structural equation modelling.